

Freshwater Mussels in Montana: Comprehensive Results from 3 years of SWG Funded Surveys



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PREFACE

The Mission of the Montana Natural Heritage Program (MNHP) is to serve as the state's most comprehensive source of scientific information used to manage Montana's native species and habitats, emphasizing species of conservation concern (SOC). Unfortunately, non-game species that are not listed or tracked by MNHP receive little attention or funding. Montana's Department of Fish, Wildlife & Parks is mandated to manage aquatic invertebrates, including crayfish and mussels, but this is largely in the administrative sense. For example, the only mention of mussels on MTFWP's website is the threat of invading zebra mussels or in the fishing regulations handbook: "In accordance with the Administrative Rules of Montana, Section 12.2.501, it is unlawful to take or possess freshwater mussels or their shells for sale or commercial distribution".

An agency tasked with comprehensive native species management should address all Montana's species, especially those (i.e. aquatic insects, mussels) with intricate ties to many freshwater game fish species. With the completion of MT's Comprehensive Fish & Wildlife Conservation Strategy (CFWCS) for native species management in 2005, it became apparent that the invertebrate species of the state were lacking basic scientific information. The Western Pearlshell mussel (*Margaritifera falcata*) which was listed as a potential species of concern in 2004 (S2S24) (MNHP 2004) became a Tier I invertebrate species of greatest conservation need (CFWCS 2006), and the Mussel Taxonomic Group was in need of basic statewide inventory. In fact, little attention has been given to Montana's mussels since the Henderson reports of 1924 and 1936, but see cursory and regional treatments by Frest and Johannes 1995 and McGuire and Marshall 2001. A statewide summary of mussel collections by Gangloff and Gustafson (2000) accomplished substantial gains in the knowledge of Montana's mussel fauna, but regardless of this recent work, an additional species was added to the faunal species list as recently as 2001 (Gustafson, pers. comm.). It was obvious that a more comprehensive treatment of the state's mussels would be needed. Therefore, MNHP solicited and received funds from State Wildlife Grants (SWG) to implement a comprehensive survey plan to determine distribution & population viability of the 3 documented native mussel species, the western pearlshell (*Margaritifera falcata*), the fatmucket (*Lampsilis siliquoides*) and the Giant floater (*Pyganodon grandis*), as well as the recently introduced species, the black sandshell (*Ligumia recta*), the mapleleaf (*Quadrula quadrula*) and the white heelsplitter (*Lasmigona complanata*).

EXECUTIVE SUMMARY

During the past three years, we've made significant strides toward documenting distributions and understanding Montana's freshwater mussels through data compilation, inventory and public education. Although the five eastern Montana mussel species (2 native and 3 introduced) have secure populations and are even expanding their ranges, one of the state's native species, the western pearlshell, *Margaritifera falcata* has experienced significant range reductions in the past 100 years, and in 2008 was added to Montana's SOC list as a S2, vulnerable to extinction in the state. Despite finding eight western streams with large viable pearlshell populations (up to 3,000 mussels per km), we have evidence from hundreds of negative surveys documenting the extirpation of the western pearlshell from countless streams and hundreds of river miles throughout the state, as well as dozens of non-viable populations that will be extirpated from streams and whole watersheds (Smith River) within the next 25 years. This fact should be an impetus to continue to research and understand this species in Montana, in addition to actively pursuing restoration projects that would benefit this species or its native fish host the westslope cutthroat trout.

We performed extensive surveys in most of the eastern watersheds of the state and report that the largest populations of warm water mussels, notably the native fatmucket and introduced black sandshell (avg. 8.2 and 4 mussels per hour, respectively), are found within the Wild & Scenic Missouri River between Fort Benton and Judith River landing and the Marias River (above Lake Elwell & within 10 miles of the confluence) where fatmucket populations are approaching those densities (avg. 7 per hr). The native giant floater is more evenly distributed and abundant in the Northern Glaciated Prairie River Basins compared to central and southeast Montana, but rarely did we find populations exceeding more than 10 mussels per hour. Our surveys in the Yellowstone River indicate that the mainstem river has much lower mussel density overall, with fatmucket catch rates averaging ~1 per hour. Although, large prairie rivers entering the Yellowstone River have higher fatmucket densities: Bighorn and Tongue Rivers averaged 6 and 5 individuals per hour, respectively. We documented the first records of live giant floaters in the Yellowstone Basin at 3 tributary sites (O'Fallon, Little Porcupine, Tongue River), but no evidence of this species found live in the mainstem. The introduced mapleleaf (*Quadrula quadrula*) has high densities in the lower Tongue River, but was not found live in the mainstem Yellowstone. The introduced creek heelsplitter have increased their

upstream distribution in the Milk River system, but not to the extent that the black sandshell have expanded their range.

The introduced mussels in Montana do not seem to be negatively affecting the native species, coexistence and non-exclusion is evident in stream reaches documented to have both present. But rather, they seem to be an augmentation to the mussel fauna of the state, and in the case of the black sandshell seems to be more viable in the upper Missouri River than in its native sections of the Missouri River where it is in decline.

Over the last three years we've given mussel survey and identification workshops to over 65 fisheries biologists and hydrologists in MT & Idaho to increase the knowledge base, interest and capacity to survey and report mussel populations in all regions of the state. Attendees of these workshops reported back data for an additional 100 survey reaches, including the identification of two new viable western pearlshell sites in 2009.

To generate public interest and support of freshwater mussels, we produced a pocket-sized mussel field guide and a full-sized Mussels of Montana Poster which will be distributed around the state from various agency offices and within the science educational system. Increasing interest and knowledge in freshwater mussels and species other than the typical sportfish is essential for the sustainability of these species and for the concern of the health of their aquatic ecosystems.

ACKNOWLEDGEMENTS

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Table of Contents

Preface	2
Executive Summary.....	4
Acknowledgements	5
Introduction.....	7
Systematic List of Montana Mussels.....	12
Key to the shells of Montana's Mussel Species.....	14
Methods.....	15
Field Surveys.....	17
Results and Discussion.....	21
Species Accounts.....	25
Conclusions and Recommendations.....	36
Literature Cited.....	37

Appendix A. Global/State Rank Definitions
Appendix B. Mussel Survey Sites by Watershed
Appendix C. Western Pearlshell Mussel Viability Sites

List of Tables

Table 1. Status, distribution and fish hosts of mussel species that occur in Montana.....	13
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List of Figures

Figure 1. Generalized Mussel Life Cycle (courtesy of USFWS).....	8
Figure 2. Four basic life stages of freshwater mussels and possible limiting factors.....	9
Figure 3. The longitudinal transect mussel survey technique with an aquascope.....	17
Figure 4. The longitudinal transect mussel survey technique using SCUBA.....	17
Figure 5. Quantitative Search for juveniles using 0.25 m ² quadrat	19
Figure 6. Number of live mussel individuals per survey site in Montana and Idaho.....	20

List of Maps

Map 1. Targeted 5 th code Watersheds for SWG Mussel Sampling.....	12
Map 2. Distribution of mussels in Montana based on surveyed sites and literature records.....	22
Map 3. Watershed distribution of mussels in Montana based on positive survey points within the 5 th code HUCs.....	23
Map 4. Distribution of the Western Pearlshell in Montana based on positive survey points.....	27
Map 5. Viability of Western Pearlshell populations in Montana and Idaho based on positive survey points.....	28
Map 6. Distribution of the Fatmucket in Montana based on positive survey points.....	29
Map 7. Distribution of the Giant Floater in Montana based on positive survey points.....	32
Map 8. Distribution of the Black Sandshell in Montana based on positive survey points.....	34
Map 9. Distribution of the White Heelsplitter in Montana based on positive survey points.....	36
Map 10. Distribution of the Mapleleaf in Montana based on positive survey points.....	37

INTRODUCTION

The world's greatest diversity of freshwater mussels (Unionoida) is concentrated in North America, with approximately 300 species and subspecies (Turgeon *et al.* 1998; Stein *et al.* 2000). The southeastern United States is the continental hotspot with 269 of these species (Stein *et al.* 2000), and mussel diversity decreases significantly the further north and west one travels from this region. Unfortunately for states such as Montana, Wyoming and Colorado which straddle the continental divide and sit at the headwaters of major rivers, mussel species diversity also decreases as one ascends the watershed, coinciding with decreasing fish diversity (Watters 1992). Thus, the resultant low native mussel diversity in Montana (three, maybe four species historically; Henderson 1924) has translated into little interest or attention to our mussel fauna (Gangloff and Gustafson 2000). Adjacent western states have similar low mussel diversity: Wyoming has seven species (Cvancara 2005), Colorado had seven species (only three are extant) (Cordeiro 1999) and Idaho reported five mussel species (Frest and Johannes 2000), but one undescribed species has been synonymized resulting in four total native species. In accordance, downstream Missouri River state's mussel faunas increase in richness with North Dakota having 13 species (Cvancara 2000) and South Dakota harboring 28 species.

Most of the freshwater mussels (Bivalvia: Unionida) that occur in North America belong to the family, Unionidae; only five species are in the family Margaritiferidae, one of which occurs in Montana. Freshwater bivalves are truly ancient invertebrates, dating back to the late Devonian Period (Grayson 1988). We consistently find mussel shells embedded in eroded sandstone outcrops in eastern Montana dating back to the Paleocene (~50mya) (Stagliano, pers. obs.), and two extant species in Montana were uncovered from a prehistoric mine site near Three Forks dating back 2-3 thousand years (Lippincott and Davis 2000). The western pearlshell, *Margaritifera falcata* mussel probably arrived in Montana's upper Missouri River Basin >5 mya from migrating westslope cutthroat trout when the upper Missouri River from Canyon Ferry Reservoir flowed south to the Snake River (Gustafson 2000). The presence of *M. falcata* in Montana has been referred to since 1869 (Cooper 1869); though Lewis and Clark must have encountered evidence of this mussel, but did not mention this species. They did name the Musselshell River on their way up the Missouri River in May 1805 due to the numerous mussel shells found on the banks (Jackson 1962); these were presumably fatmuckets.

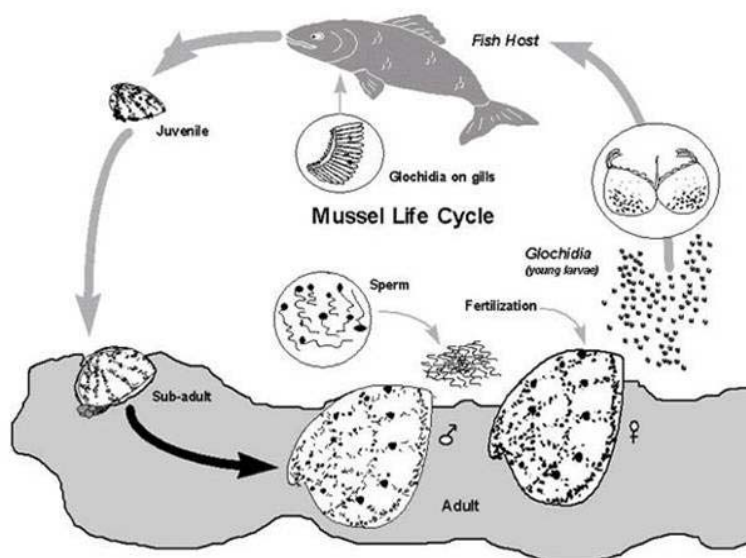
Unfortunately, the rich historic mussel fauna of North America has recently become seriously jeopardized. During the past century, North American freshwater mussels have

undergone drastic declines, and they currently are one of the most imperiled groups of animals on the planet (Williams et al. 1993) and especially in North America (Allen and Flecker 1993, Stein et al. 2000) where of the approximate 300 native species, nearly two-thirds are considered to be in need of some conservation attention (Williams et al. 1993); 61 of these species are federally listed as endangered and eight listed as threatened (USFWS Box Score, 2003). Thirty-six species are believed to have gone extinct in North America and that number is expected to rise (Neves *et al.*, 1997; Bogan 1993).

Reasons for protecting the state's freshwater mussels are numerous. Because mussels are filter feeders, they contribute greatly to water quality by removing suspended particles of sediment and detritus. According to Allen (1914), an average-sized mussel can filter over eight gallons of water during a 4 hour period. In high-density mussel beds, the filtering effect of thousands of mussels can be ecologically significant.

Another important ecological contribution of mussels includes being an important food source for aquatic and terrestrial animals. Furbearers such as the raccoon, muskrat, and otter utilize mussels extensively as food. Although only a few fishes extensively utilize mussels directly as food (freshwater drum and carp), many other species benefit because filter-feeding mussels discard undigested food in strands of mucus, called pseudofeces. This material is fed upon by other stream invertebrates that are, in turn, fed upon by fishes. Mussels basically convert inaccessible sestonic drifting nutrients and carbon into a benthic food source.

The life history of freshwater mussels consists of four basic life stages: reproductive, larval or parasitic, juvenile, and adult (Figure 1). The larval stage (glochidium) must briefly parasitize a vertebrate host (usually a fish) in order to complete its development (see Table 1 for a list of fish hosts for mussels in Montana). These glochidia must attach to the gills of a fish within a few days in order to survive. They eventually fall off of the



host as a small juvenile mussel. The primary function of larval parasitism on fish appears to be transport to upstream habitats (Surber 1913), since unattached larvae can only drift downstream and adult mussels are not very mobile; although, a small nutrient meal is also gained by the larvae. Both of these events exhibit high mortalities, which are offset by long-lived adults and a release of huge numbers (millions) of glochidia.

Many mussel species have fascinating reproductive adaptations to increase the chances that glochidia will make contact with a suitable fish host (Barnhart et al. 2008). Numerous articles, pictures and videos exist that describe and show the evolutionary phenomenon of female mussel lures (fish or invertebrate prey items) used to dupe fish into coming within range or biting the lure to become infested with the glochidia or larval mussels (Haag and Warren 1999). Mussels are often labeled as “generalists” or “specialists” with regard to the variety of fish they will use as hosts. Most of the species in Montana are generalists using multiple species of host fish; the western pearlshell is perhaps the most specialized evolving with westslope cutthroat trout and has a host preference to salmonids of the genus *Oncorhynchus* (Table 1).

Reproduction among host specialists relies on the distribution, densities and dynamics of its specific host fish, adding uncertainty to an already tenuous reproductive strategy.

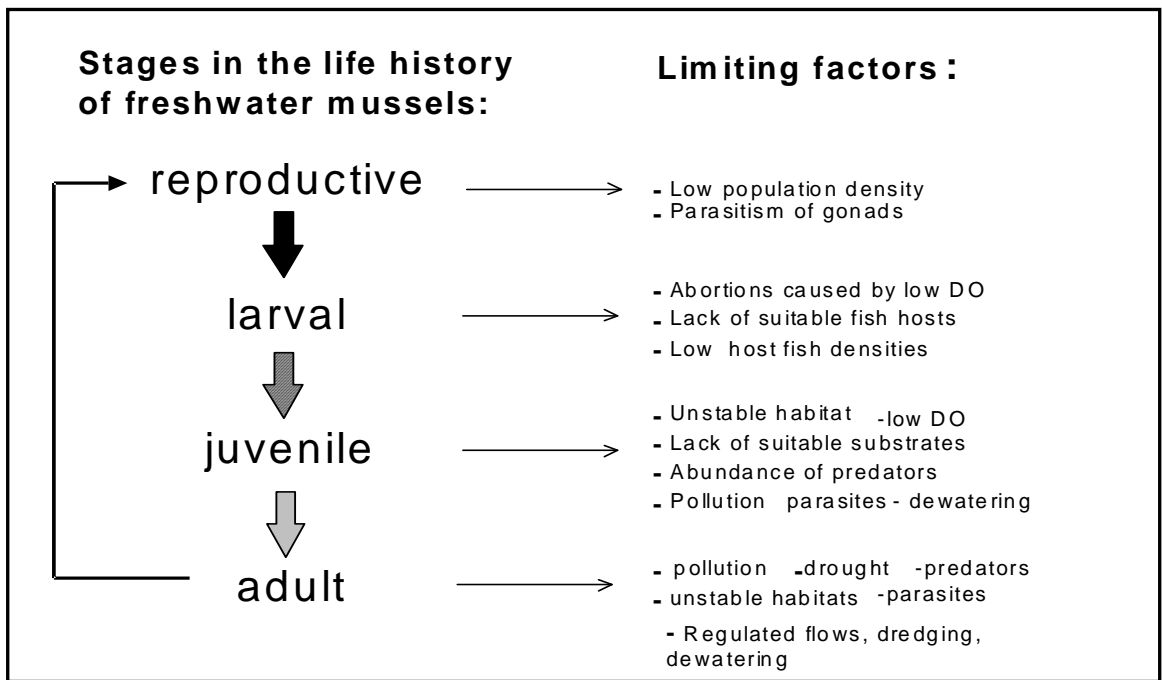


FIGURE 2. Four basic life stages of freshwater mussels and possible limiting factors.

Ecological Requirements

Habitat. Characterization of specific habitat requirements for freshwater mussels is difficult because of the broad microhabitat tolerances and site-specific preferences (Strayer 1981; Gordon and Layzer 1989; Strayer and Ralley 1993). Habitat use on a broader scale, however, is more predictable. For instance, the western pearlshell prefers stable gravels and pebbles in small to medium coldwater rivers with Rosgen C channel morphology (Rosgen 1996) or predominately the C007 Aquatic Ecological System (Stagliano 2005). While the mussels that occur in eastern Montana are generally found in medium to large warm-water prairie streams at depths less than a couple of meters in predominantly gravel, sand or silted substrates, which are stable and well compacted, not loose and shifting. Although in the Wild and Scenic Section of the Missouri River, the black sandshell has been observed in higher velocity, cobble substrate areas than any of the other species (Stagliano, personal observation). The giant floater, *Pyganodon grandis*, is the native species found in the smallest prairie streams and tolerates the most lentic conditions and the softest sediments (silted side channels) (see Species Accounts for more detailed habitat information).

Causes for the Decline

There are many potential causes for the decline of all life history stages of mussels in Montana and across North America (Figure 2). Factors such as stream habitat degradation and fragmentation (*e.g.*, dams, stream channelization, diversions and dredging), host fish declines and point and nonpoint source pollution are implicated in mussel declines throughout North America (Bogan, 1993; Neves *et al.*, 1997). These factors may affect all four life stages of a species or may be especially detrimental to a particular life phase (Figure 2). Dewatering of stream channels is an almost instant way to kill adult and juvenile mussels in the benthic substrate. More recently, the nonindigenous, zebra mussel (*Dreissena polymorpha*), because of its high reproductive capability and competitive interaction with native mussels, has begun to wreck havoc on mussel populations in eastern and mid-western states as close as South Dakota.

The main cause of stream deterioration in Montana is high sediment load, chiefly related to agricultural practices, which is considered the most serious pollutant of North American streams (Waters 1995), and is the most listed cause of stream impairment on Montana's 303(d) waterbody list (MTDEQ 2007). Anthropogenic sediment can degrade mussel habitats by embedding the substrate, which decreases substrate permeability. Because

juvenile mussels are restricted to primarily interstitial habitats, the smothering effect of silt is probably a major factor in preventing successful recruitment for sensitive species (Marking *et al.* 1979). Additionally, as sediment restricts the spawning success of certain mussels' salmonid host species, lowered fingerling densities in stream sections inhabited by mussels becomes a recruitment limitation (Bogan 1993).

Anthropogenic habitat modifications can also lead to widespread declines in mussel diversity and abundance (Williams *et al.* 1993; Bogan 1993; Layzer and Madison 1995). When a river or stream is dammed, the impounded stream channel is transformed from a free-flowing, well-oxygenated environment to one that is stagnant and prone to silt deposition, which is intolerable for most riverine species. The presence of multiple large dams and reservoirs in eastern Montana (Fort Peck, Tiber, Fresno, Yellowtail, Tongue River and numerous smaller ones, like Beaver Creek and Whitetail Reservoir, has caused the loss of hundreds of cumulative miles of warm water riverine mussel habitat, but in turn has expanded habitat for the giant floater in the northern glaciated region which can tolerate lentic (lake-type) conditions. The suitability of below-reservoir downstream habitats for mussels is also influenced by the operation of dams. Cold water discharges from the bottoms of larger dams in eastern MT create unsuitable temperature regimes and substrate conditions for many miles below. For instance, in the Marias River, it is at least 10 river miles below Tiber dam before prairie river characteristics return making it suitable for warm water mussels, and closer to 20 miles downstream before populations of the fatmuckets are similar to those above the reservoir (Stagliano, unpublished). Dams serve as barriers to host fish, preventing upstream and downstream recolonization or migration. Because of this strong mussel-fish interdependence, any threat to host fish also jeopardizes mussel survival. If suitable host fish disappear, due to fish community changes, fish corridor blockages (dams & diversions) or water pollution, mussel populations will not be viable in the long term (Bogan 1993).

Conservation

Perhaps the most fundamental reason for protecting any species is the concept of stewardship. This concept holds that, apart from any perceived utility or profit in a species, man has the moral obligation to protect and preserve the diversity of the natural world, lest we live in a monoculture. Each species is an irreplaceable part of our natural heritage.

“To keep every cog and wheel is the first precaution of intelligent tinkering.”

—Aldo Leopold, *Sand County Almanac*

Ecosystem-based conservation, where the contribution of all species in maintaining ecological processes is considered—is coming to the forefront, replacing the previous focus on just a few conspicuous species, mostly “cute and fuzzy” vertebrates and plants. The public is also developing an appreciation for at least some groups of invertebrates. Mussel shells are collected by amateur and professional biologists, who find them to be both interesting and educational. The shells provide a durable record of a species presence. They also provide a record of the history of each individual in the annual rings of growth, which show that some species live over a century. This record can also document changes in stream health through time because mussels are long-lived and sensitive to pollution. Therefore, mussels serve as important indicators of aquatic health.

Three species of native and three introduced freshwater mussels (Order: Unionoida, Families: Unionidae and Margaritiferidae) are documented to occur in Montana (see Table 1): the Western Pearlshell (*Margaritifera flacata*); the Fatmucket (*Lampsilis siliquoidaea*) and the Giant floater (*Pyganodon grandis*) are native; while the Black Sandshell (*Ligumia recta*), the Mapleleaf (*Quadrula quadrula*) and White or Creek heelsplitter (*Lasmigona complanata*) are introduced. It is possible that Little Missouri River populations of the heelsplitter are native.

SYSTEMATIC LIST OF MONTANA MUSSELS

Phylum Mollusca

Class Bivalvia

Order Unionoida

Family Margaritiferidae

1. Western pearlshell *Margaritifera falcata* (Gould, 1850)

Family Unionidae

2. Fatmucket *Lampsilis siliquoidaea* (Barnes, 1823)
3. Giant floater *Pyganodon grandis* (Say, 1829)
4. White heelsplitter *Lasmigona complanata* (Barnes, 1823)
5. Black sandshell *Ligumia recta* (Lamarck, 1819)
6. Mapleleaf *Quadrula quadrula* (Rafinesque, 1820)

TABLE 1. Status, distribution and fish hosts of mussel species that presently occur in Montana.

Species	Status	Aquatic System^a	MT Range, Basin^b	Fish Hosts in Montana
Western Pearlshell (<i>Margaritifera falcata</i>)	G4 S2 SOC At-Risk	1	Sporadic, formerly ubiquitous in western MT streams: KT, CF, BL, UMO	Salmonids of <i>Oncorhynchus</i> genus (Westslope Cutthroat, Rainbow Trout) & <i>Salvelinus</i> (Brook, Bull Trout)
Giant floater (<i>Pyganodon grandis</i>)	G5 S4 Secure	2 & 3	Eastern MT , MO, MU, MI, YE	Native species: Iowa darter, brook stickleback, channel catfish Introduced: carp, bullheads, centrarchids and yellow perch
Fatmucket (<i>Lampsilis siliquoidaea</i>)	G5 S5 Secure	2 & 3	Eastern MT , MO, MU, MI, YE	Native species: freshwater drum, channel catfish, stonecat, sturgeons Introduced: carp, bullheads, centrarchids and yellow perch
Black Sandshell (<i>Ligumia recta</i>)	G5 SNA Introduced, expanding	2	Eastern MT , MO, MU, MI	Native species: Sauger Introduced Species: Walleye, Yellow Perch, Centrarchids
White heelsplitter (<i>Lasmigona complanata</i>)	G5 SNA Introduced, isolated populations	2	Lower MI, Beaver Creek trib. to the Little MO	Native species: None. Introduced Species: Common Carp, Green Sunfish, Largemouth Bass
Mapleleaf (<i>Quadrula quadrula</i>)	G5 SNA Recently introduced, isolated populations	2	Tongue River, Lower Yellowstone	Native species: Channel Catfish Introduced Ictalurids: Bullheads,

^a 1- Mountain Streams & Intermontane Rivers capable of sustaining salmonid populations. 2-Medium-large mixed-river systems & prairie rivers. 3-prairie streams

^b MO- Missouri River below Great Falls, MI-Milk River, MU-Musselshell River, YE-Yellowstone River, KT-Kootenai River, CF- Clark Fork, BL- Blackfoot R., UMO-Upper Missouri River above Great Falls

Key to the shells of Montana's Mussel Species:

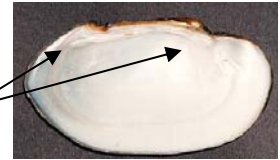
1. Hinge without teeth, shell light-weight (Native)

.....(Giant Floater) [Pyganodon grandis \(Say\)](#)

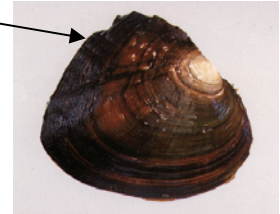


1'. Hinge with teeth, shell heavier.....2

Hinge teeth



Dorsal wing



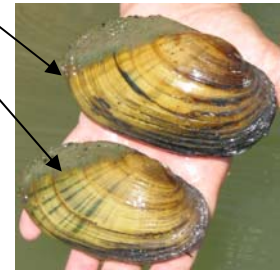
2. Inside of shell white

2a. Outside of shell dark brown to black, without rays, but with a dorsal wing (Introduced)..... (Creek Heelsplitter) [Lasmigona complanata \(Barnes\)](#)

Green Rays

2b. Outside of shell light brown to tan, often with greenish rays & without a dorsal wing (Native).....

.....(Fatmucket) [Lampsilis siliquoidea \(Barnes\)](#)



Pustules

2c. Outside of shell light brown to tan, without green rays, but with radiating rows of pustules or ridges (Introduced).....

.....(Mapleleaf) [Quadrula quadrula \(Rafinesque\)](#)



2'. Inside of shell purple or pink.....3

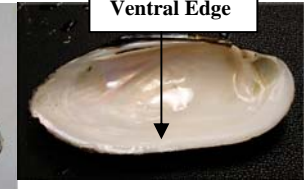
3. Ventral edge slightly concave, shell and teeth weak (Native) (Western Pearlshell)

.....[Margaritifera falcata \(Gould\)](#)



3'. Ventral edge convex, shell heavy and teeth strong (Introduced) (Black Sandshell)

.....[Ligumia recta \(Lamarck\)](#)



Ventral Edge

METHODS

Data Compilation

Data compiled and collected for this project came from numerous sources and locations:

- 1) historical and museum records from previous mussel collections in the state dating back to Cooper (1869), Elrod (1900, 1902) and Henderson (1924, 1936)
- 2) more recent targeted mussel collection records made available for NHP use (D. Gustafson, D. McGuire), some of which have been previously published in Gangloff and Gustafson (2000), McGuire and Marshall (2001).
- 3) Incidental mussel shells reported by various agency biologists during stream fisheries projects or general public sightings
- 4) NHP and USFS standardized mussel collections using methodology described below. The last collection method is the only data which we converted to mussel catch per unit effort or used to estimate population viability ranks (A-D, NatureServe 2008).

Museum Collections

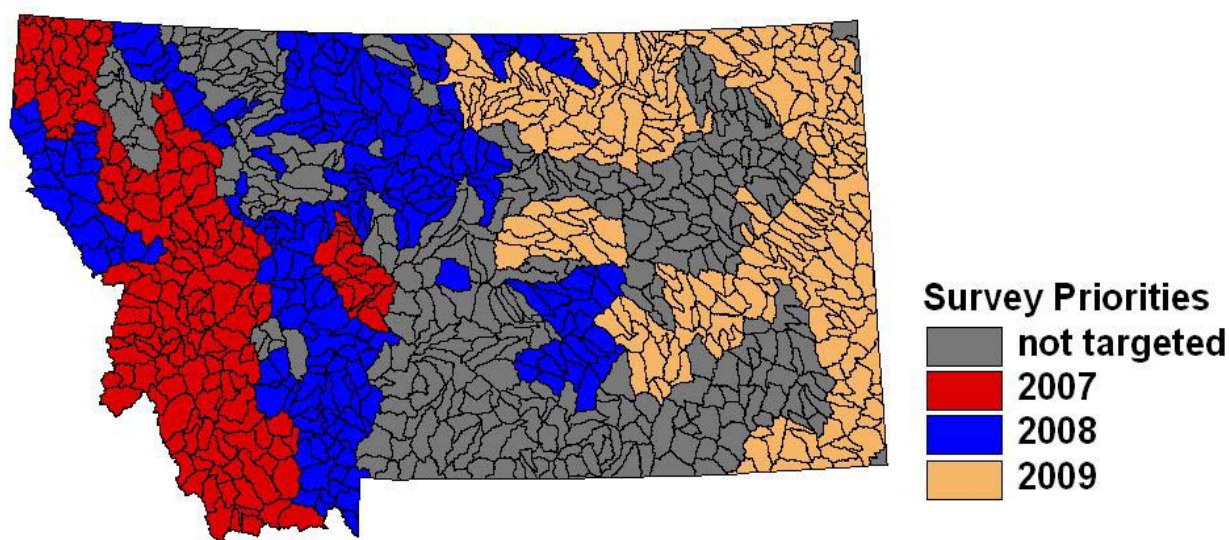
We supplemented our sampling and literature review work with online database and/or requested searches of collection records held at various institutions known as mollusk repositories (Ohio State University, University of Michigan Museum of Zoology, California Academy of Sciences, National Academy of Sciences in Philadelphia, Illinois Natural History Survey), as well as personal collections made by D. Gustafson and D. McGuire. From these museum searches, we obtained very few records of mussels from Montana, this effort confirmed how understudied this state's mussel fauna truly is. Voucher specimens from our work have been deposited at the Montana Natural Heritage lab in Helena and at the University of Alabama Collections. Identifications followed Burch (1989) and were confirmed by Dan Graf (University of Alabama, previously with the Philadelphia Academy of Sciences), nomenclature follows Turgeon et al. (1998).

Statewide Watershed Sampling Design

Montana is a geographically huge and diverse state and the prospect of a statewide sampling scheme was a daunting task; therefore we delineated priority watersheds "somewhat randomly" based on a number of criteria. First priority was given to watersheds having previously

reported mussels or historical records; second, watersheds identified as Tier I or II priorities in the Comprehensive Fish & Wildlife Conservation Strategy (CFWCS 2005) and third, where there were concurrent MNHP projects occurring in the region that would allow multiple site visits at a lower cost to the project. We developed a sampling scheme that allowed statewide coverage (>50% of all 5th code watersheds visited), in addition to targeting 90% of the Tier I or II priority watersheds (Map 1). Non-priority watersheds were opportunistically surveyed throughout the study. No effort was made to sample ponds/lakes or wetlands in the priority watersheds.

Map 1. Targeted 5th code Watersheds for SWG Mussel Sampling.



Mussel Field Sampling

Mussels were sampled using a catch-per-unit-effort (CPUE) or catch per linear distance (CPUD) approach because the emphasis of our study is to determine species composition (presence/absence) and relative abundance and not to quantify densities (Vaughn et al. 1996). Time searched by the number of surveyors is expressed as number of mussels per person-hour and a measured stream distance traveled was converted to mussels per linear meter of stream (mussels per 50 stream meters). We usually devoted at least 1 man-hour of search per site and an effort was made to sample multiple geomorphic units (riffle, glide and pool sequences) and all available habitats therein. The amount of effort was dependent upon the amount of mussel evidence (shells or fragments seen), suitable habitat conditions and stream substrate (ease of sampling greatly increases the stream distance sampled). CPUE techniques provide a more

complete look at the mussel assemblage than substrate excavation quadrat methods, and are more likely to locate rare mussels (Kovalak et al. 1986) or those with low densities (Payne et al. 1997, Vaughn et al. 1996). Visual surveys were conducted along a series of 50m transects searched along the longitudinal length of the stream, depending on habitat complexity (Young et al. 2001). The longitudinal transect survey technique with additional side searching enables two surveyors to effectively search an entire cross-section of the stream channel less than ~6m wetted width (ww) (Figure 3). In wider streams, surveyors are positioned on each side of the stream searching the likeliest habitats paralleling each other, while in smaller channels (<4m WW) a single surveyor can cover the entire channel and the 2nd surveyor can proceed upstream a certain distance to begin another section of stream reach, usually at least 50m upstream to prevent substrate disturbance from clouding the water for surveyor #1; this leap-frog style of survey can quickly cover multiple 50m segments of the stream. This procedure begins at the most downstream transect in the reach.

Aquascopes (glass bottomed buckets) were used for underwater viewing within 1m on each side of the transect while wading, or in depths >0.5m, SCUBA or snorkeling was used along transects (Figure 4). We obtained global positioning system coordinates (GPS) at the downstream end of the reach for each site using a Garmin GPS 76 MAP (Garmin International) and surveyed in an upstream

direction marking the end of the reach with another GPS point. Visual surveys tend to be biased toward larger individuals, but by remaining consistent across all stream reaches, the data collected is expected to be comparable across sites and watersheds.

Figure 3 . The longitudinal transect mussel survey technique with aquascope.



Figure 4 . The longitudinal transect mussel survey technique using SCUBA.



Mussels (and dead valves) observed during the timed-transect period were placed in mesh bags for processing at the end of a 50m segment or if populations were sparse then data were recorded immediately. Live individuals collected were identified to species, measured within 5mm size-classes, enumerated and returned to where they were taken from the substrate. Dead valves were taken back as a collection record to be deposited at the Montana Natural Heritage Program, Montana State University and other mollusk repositories. Dead valves were included in the survey data only if live individuals of that species are not found. Dead valves can provide substantial information about populations by designating fresh dead (within days), recent (within 1 year) or relics (older than 1 year), as well as the size range of shells.

No effort was made to sample ponds/lakes or wetlands in the watersheds, but lentic mussel presence sites reported to NHP were included in the database.

The simplest type of field data collected is the presence of a species at a particular location, but this basic information provides little or no information about the health of a population. We performed surveys in a manner that allows qualitative population estimates and sustainability of populations in an effort to document long term species viability at surveyed sites (see *Viable Mussel Populations*; NatureServe 2008, Strayer and Smith 2003).

Age or size structure data can reveal characteristics of the population such as poor recruitment (if no young or small mussels are present), low adult survival (if no older animals are present), or a population is dominated by individuals of a certain age (Miller and Payne 1988). Aging mussels can be difficult and expensive to determine (methods reviewed in Nedeau *et al.* 2000), but the size distribution of animals, determined by measuring each animal encountered, can provide a suitable alternative to age data. Once mussel beds are found, a quantitative method for estimating densities and locating juveniles is excavating a series of 0.25 m² quadrats (Figure 5). Oftentimes young mussels (<30 mm) will not be visible on the surface. Only by digging out the substrate within the ¼ m² quadrat by hand or rake down to the streambed and sifting sediments through a sieve or mesh net will one locate these and document successful recruitment. We used these quantitative methods on a subset of streams (i.e., those with a fair abundance of *M. falcata*) to determine the presence of juvenile mussels. Additionally, determining numbers of buried mussels in relation to those on the surface can double density estimates in deep gravel, dense mussel beds. Data recorded: Number juvenile mussels m⁻² in the mussel bed and the B-Factor = # Buried / # Visible in the Quadrats.



High population density may indicate a healthy and stable population whereas low population density may be cause for concern. Combined with age or size data, population density can be used qualitatively. The condition of individual animals, such as the degree of shell erosion or deformities can provide insight into longevity of individuals and the severity of the ambient water quality conditions.

Characteristics of Viable Mussel Populations

Using characteristics of the population data collected at the site, we applied the following criteria to delineate viability of the western pearlshell mussel populations (Nature Serve 2009a, Ranks A-F: A- excellent viability, B-good viability, C-fair population, not viable, D-not viable, E-verified extant, F-absent, failed to find evidence of a population, H-Historical Verified Site, population now absent) .

A viability: Densities >1 per meter of stream, mussel beds containing >50 individuals, full range of size-classes, mussels <30 mm (juveniles present)

B viability: Densities >0.5 per meter of stream, mussel beds containing >25 individuals, wide range of size-classes, mussels <30 mm (juveniles present)

C viability: Low Densities > 0.1 per meter, mussel beds <25ind., limited size-classes, no juveniles present. May persist for 25 years from present.

D viability: Very Low Densities, single live individuals. Large size-class, old specimens Will not persist 25 years from present.

E verified extant: Recent shell records, but no live mussels found.

Viability of eastern Montana's warmwater mussel species was judged qualitatively by best professional judgement, because we rarely observed traditional mussel beds, rather we usually documented randomized clumps of individuals never exceeding 50 individuals per survey reach. The number of live and recent shells in the survey and size distribution of the individuals was main statistics used to judge viability of the population (Strayer & Smith 2003).

Habitat Sampling

The quality, distribution, and continuity of habitat at multiple spatial scales (river sections, entire rivers, and entire watersheds) can provide an important context when assessing the health of mussel populations. This information is particularly valuable when gathered in the same location over a long time period (i.e., long-term monitoring), or used to compare populations in different portions of rivers, across rivers, or entire watersheds. In this study we described in-stream substrate (i.e., fines, sand, gravel, cobble-boulder, and bedrock), channel depths, bank type (steep mud banks, limestone outcrops, vegetated versus non-vegetated) and riparian habitats as they relate to mussel populations within the historic and current watershed distribution of target mussel species. We evaluated stream reach habitat following methods outlined for the EPA by Barbour et al. (1999) with modifications by the National Aquatic Assessment of the Bureau of Land Management (BLM) Buglab (scores 0-24) (<http://www1.usu.edu/buglab/forms/Bug%20Protocol%20form.pdf>).

Data Management

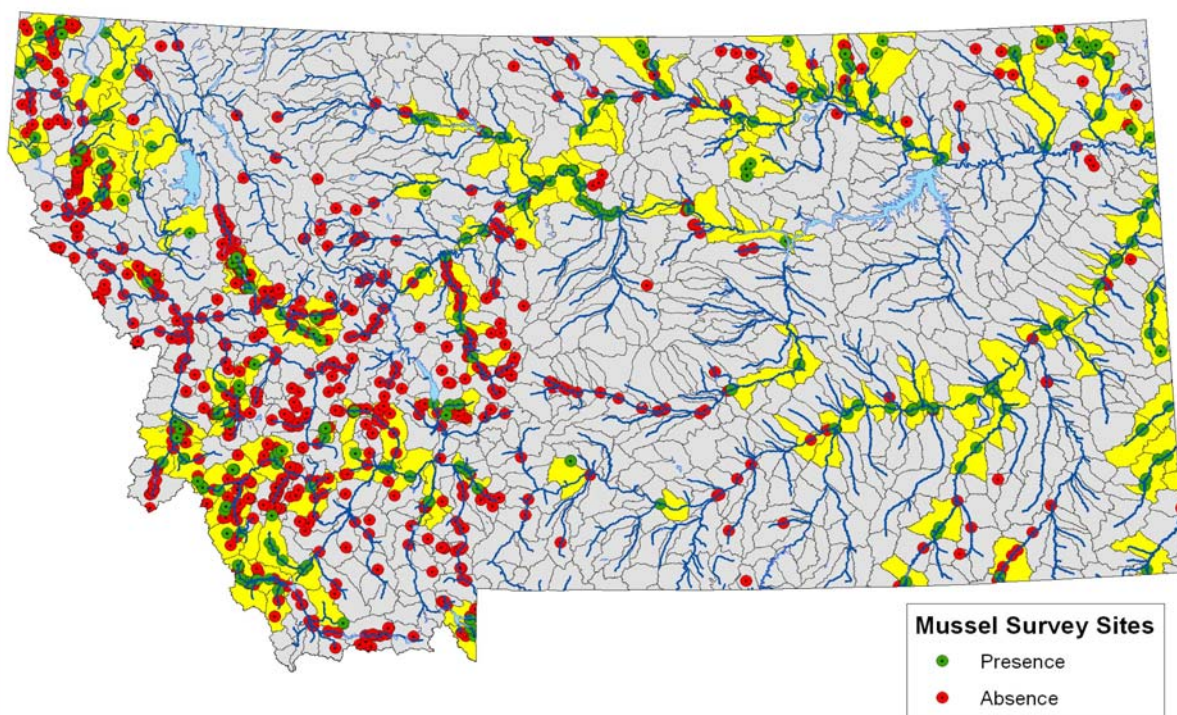
Prior to this study, information regarding the distribution of Montana's freshwater mussels (e.g., collections and databases maintained by state universities, and individuals) was minimal and not readily accessible to any one individual or agency. We constructed a comprehensive database for mussel reporting that links to a jointly managed database shared by Montana FWP and NHP. This database includes locality information, habitat, mussel survey data, as well as status information for presence data (i.e., number of live specimens, recently dead valves, relic valves and viability ranks) of all mussel species occurring in the state. The database interfaces with MTFWP MFISH info systems and to a GIS mapping application that can be viewed online with the Tracker application, <http://mtnhp.org/Tracker/NHTMap.aspx>. This allows data access to individuals and agencies involved in the conservation and management of aquatic ecosystems and freshwater mussels.

RESULTS & DISCUSSION

Overview

We conducted ~1150 standardized mussel surveys across the state and into Idaho from 2007-2009, and compiled previous surveys and information into a database of ~1330 mussel sites from 94 of the 100 4th-code watersheds (Map2, Appendix B). These surveys extrapolate to about 508 km or 316 miles of stream habitat searched for mussels. Data was compiled for all six mussel species reported to occur in MT: 202 site occurrence records for the western pearlshell, 146 fatmucket records, 92 giant floater sites, 41 sites for the black sandshell, six mapleleaf sites and five creek heelsplitter records. Of the 975 negative mussel searches (no live individuals) recorded during this time period, 120 sites had dead shells, so 855 sites reported no evidence of mussels (Figure 3). The highest percentage of negative mussel

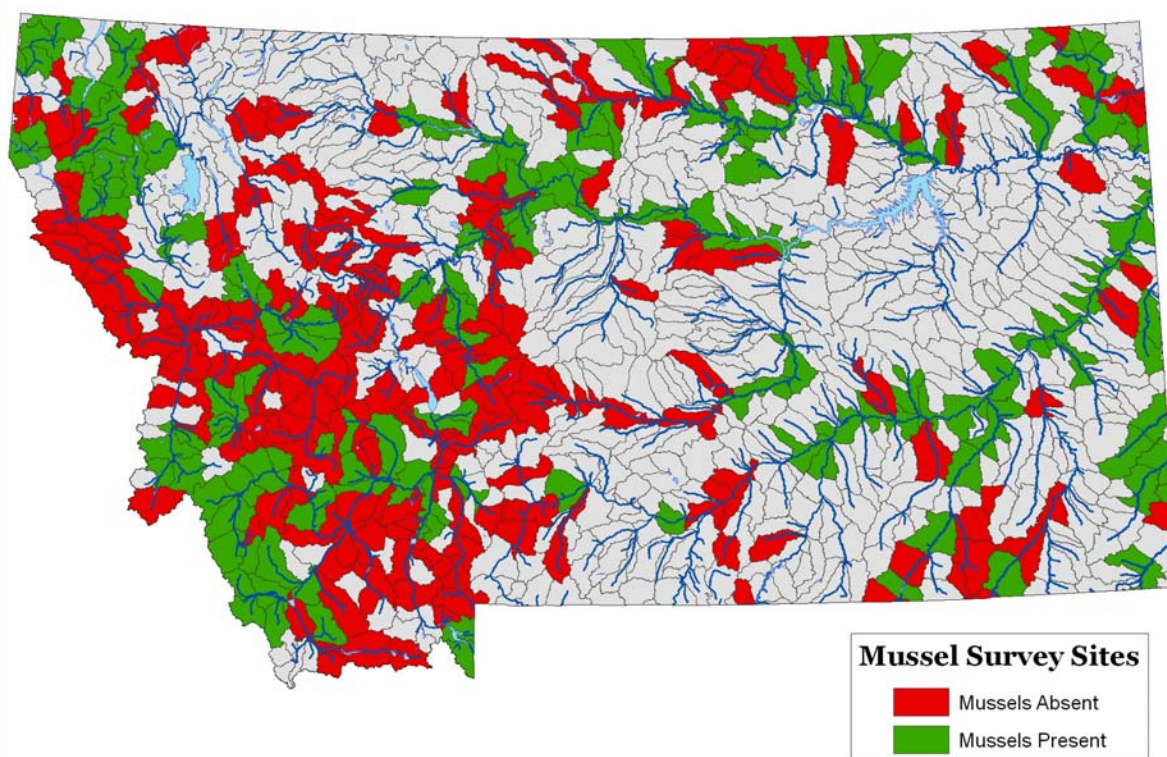
Map 2. Distribution of mussels in Montana based on surveyed sites and literature records. Yellow highlighted regions are 5th code HUC watersheds depicted as positive for mussel presence.



searches occurred for the western pearlshell at 81.2% or about 18.8% detection probability. Eastern Montana's warmwater mussels were encountered with a much higher probability (~33%); approximately one in every three river segments that we sampled contained evidence of mussels. This could be due to a sampling emphasis on the Mainstem Rivers and larger

prairie streams that are documented to contain water year round and not recording the number of dry streams that were not sampled. Despite large sampling gaps on Indian Reservations and in eastern Montana, patterns of mussel distribution at the watershed level begin to appear. Connectivity of riverine systems correlates to more 5th code watersheds within a given basin containing mussel populations. This is most evident in the Yellowstone River and the Middle Missouri River, but surprisingly also exists in the Milk River Basin which contains numerous diversion dams (Map 3). Western river systems showing mussel population connectivity include the Yaak, Thompson, upper Fisher and Big Hole Rivers, and portions of the upper Beaverhead (Map 3).

Map 3. Watershed distribution of mussels in Montana based on positive survey points within the 5th code HUCs. One positive mussel occurrence is the threshold for presence in the watershed.



Most mussel populations in Montana are not abundant, 92% of surveys in the database reported between 0-5 individual mussels; 64% of the sites with live mussels had only 1-5 individuals (Figure 5). The number of live individuals per survey reach in MT varied from zero to 480 (Figure 5). The Clearwater River reach with 480 *Margaritifera falcata* per hr extrapolated to

~3,000 mussels per kilometer of river. While in Idaho, during some *M. falcata* surveys we collected as many as 876 mussels per reach (~7,000 per km) (Figure 5).

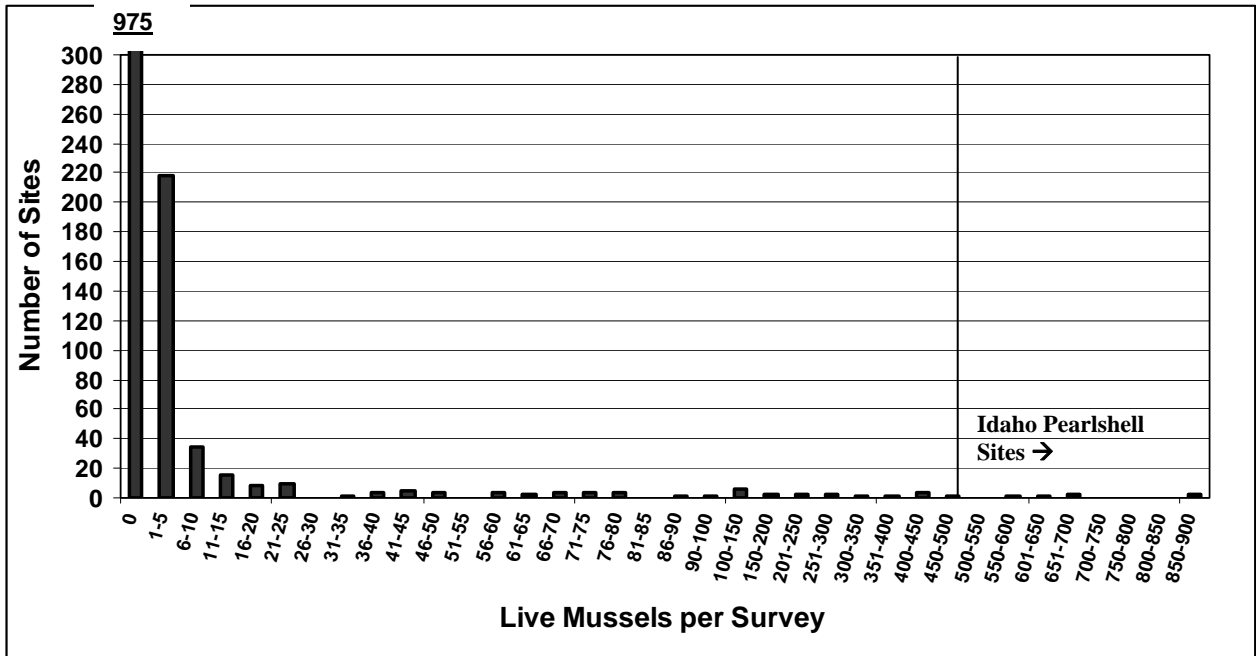


Figure 5. Number of live mussel individuals per survey site in Montana and Idaho.

The number of mussel species per site varied from zero to four (Appendix 2) with one species being the median at sites with at least one species present. In the Columbia River drainages of the west only one species, *M. falcata* is expected; fatmuckets only overlap with the western pearlshell in the Three Forks-Jefferson River area where western pearlshells are virtually gone (shells, but no live found) and fatmuckets have fair populations. Evidence of this co-existence dates back >2,000 years at an pre-historic chert mine site, where unearthed western pearlshells outnumbered fatmucket shells 4:1 (Lippencot and Davis 2000). While not scientific, this discovery indicates that western pearlshells were certainly more abundant in the river, more easily collected or preferred by Native Americans. Four of the five potential eastern mussel species were collected in the Milk River near Bjornberg Bridge sp Catch-per unit-effort (CPUE) for Montana varied from 0 to 480 individuals per hour (Appendix 1), while Idaho western pearlshell sites reported up to 880 mussels per hour of search.

The introduced creek heelsplitter have increased their upstream distribution in the Milk River system, but not to the extent that the black sandshell have expanded their range.

The introduced mussels in Montana do not seem to be negatively affecting the native species, coexistence and non-exclusion is evident in stream reaches documented to have both present.

But rather, they seem to be an augmentation to the mussel fauna of the state and in the case of the black sandshell seems to be more viable in the upper Missouri River than in its native sections of the Missouri River downstream where it is state listed as imperiled (S1) in South Dakota and Iowa (Nature Serve 2009).

Concurrently with the field surveys, we conducted six mussel identification and survey techniques workshops to ~70 fisheries biologists and hydrologists across Montana and into Idaho. Attendees of these workshops reported back data for an additional 100 survey reaches, including the identification of two new viable western pearlshell sites in 2009. Throughout the course of these surveys, we found no evidence of the western-ridged mussel, *Gonidea angulata* in our searches of the Columbia River basin tributaries and have listed this species as SH-SX, presumed to be extinct or extirpated from Montana; historical records only (NatureServe 2009).

Native Species Accounts

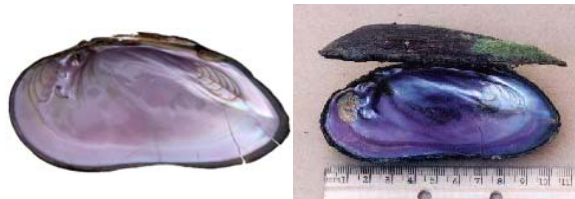
Western pearlshell *Margaritifera falcata* (Gould)

Global Status: G4G5

State Status: S2

Abundance: Regionally uncommon, can be locally common, but in serious decline and at risk statewide, especially the upper Missouri River populations.

Species of Concern in Montana, Wyoming and Idaho; potentially extirpated in Utah.



Description: Elongate shell is normally 2.5-4 inches (50-80mm) in length with a concave ventral edge. Interior shell (nacre) has a purple to pink hue. Outside of shell can be dark brown to black with a whitish tan area where the umbo (dorsal hinge) has been worn down.

Host Fish: Native species: Westslope Cutthroat Trout, Steelhead and Chinook Salmon (Idaho). Introduced Species: Rainbow and Brook Trout.

Habitat: The species is found in cool-coldwater, stable running streams and rivers that are generally low to moderate gradient (1-2%) and wider than 2m (average wetted stream width of viable populations = $5.2\text{m} \pm 1$); preferable benthic substrate is stable gravel and pebble (% dominant substrate size = 32mm). Generally, this stream type is equivalent to a Rosgen Class C4. The riparian zone is usually dominated by willows or alders. This species can occur in sand or gravel among cobble and boulders in moderate to higher gradient larger rivers. In large Idaho river systems (Salmon and Clearwater River Canyons), *M. falcata*, attains maximum density and age in river reaches where large boulders structurally stabilize cobbles and interstitial gravels (Vannote et. al 1982).



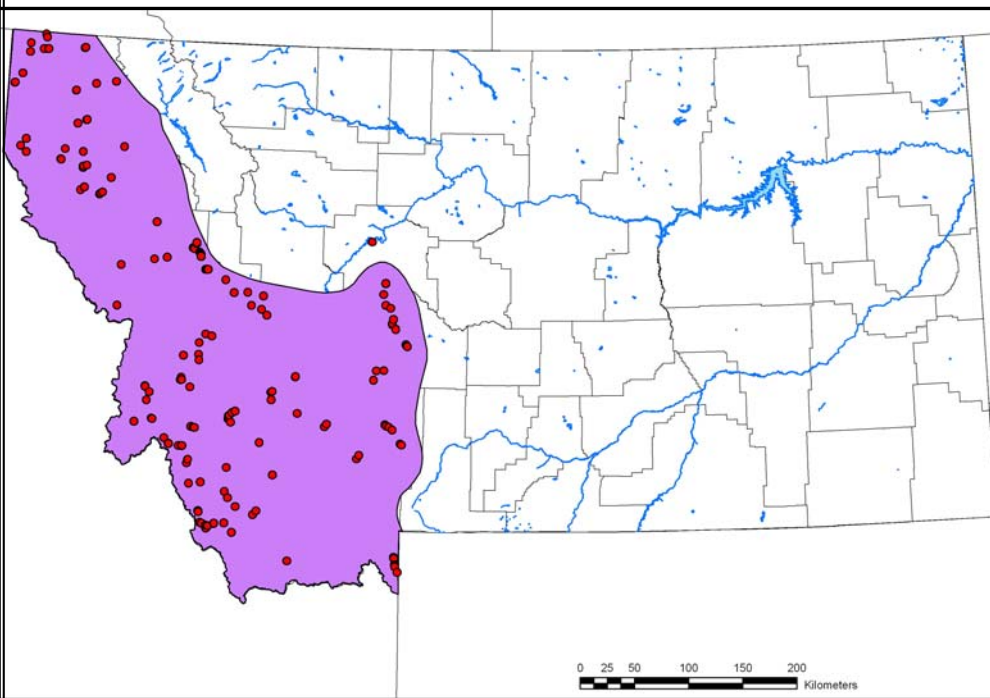
Margaritifera falcata may be one of the longest living freshwater invertebrates and animals overall. The oldest known specimens have been aged at greater than 90 years (Toy 1998), 100 years (Vannote and Minshall 1982) and >100 years old (Stock 1996).

Boulders tend to prevent significant bed scour during major floods, and these boulder-sheltered mussel beds may be critical for population recruitment elsewhere within the river, especially after periodic flood scour of less protected mussel habitat. Stream velocities affect intra-stream habitat selection of this mussel (Oswald 2008) with stream gradients of 1.4% containing

mussels and those averaging 2.4% absent of mussels. Mussels will not occur in streams where the substrate is substantially disturbed by torrents (Toy 1998). *M. falcata* is found in hard as well as soft water, unlike *M. margaritifera* (Clarke 1981). Glochidia of *M. falcata* are highly host specific (Bauer 1987) and are generally restricted to the salmonid family.

Distribution: Prior to this study, there were only 40 occurrence records in the database, now we have 202 records (Map 4). While researching for the Comprehensive Fish & Wildlife Conservation Strategy (CFWCS 2005), limited distribution or population viability data on *Margaritifera falcata* existed for Montana, and this species was listed as “stable” by Gangloff and Gustafson (2000), but as a Potential Species of Concern for MT (S2S4, MNHP and MFWP 2004). At that time, surrounding states had it listed as state-threatened (S3 in Washington) or unranked, but declining in neighboring states Wyoming, Idaho (G. Stephens, pers. Comm.) and Oregon (NatureServe 2005). In the course of preparing the CFWCS, *M. falcata* was

Map 4. Distribution of the Western Pearlshell in Montana based on positive survey points. Recent shells collected in the survey also constitute “positive” records.

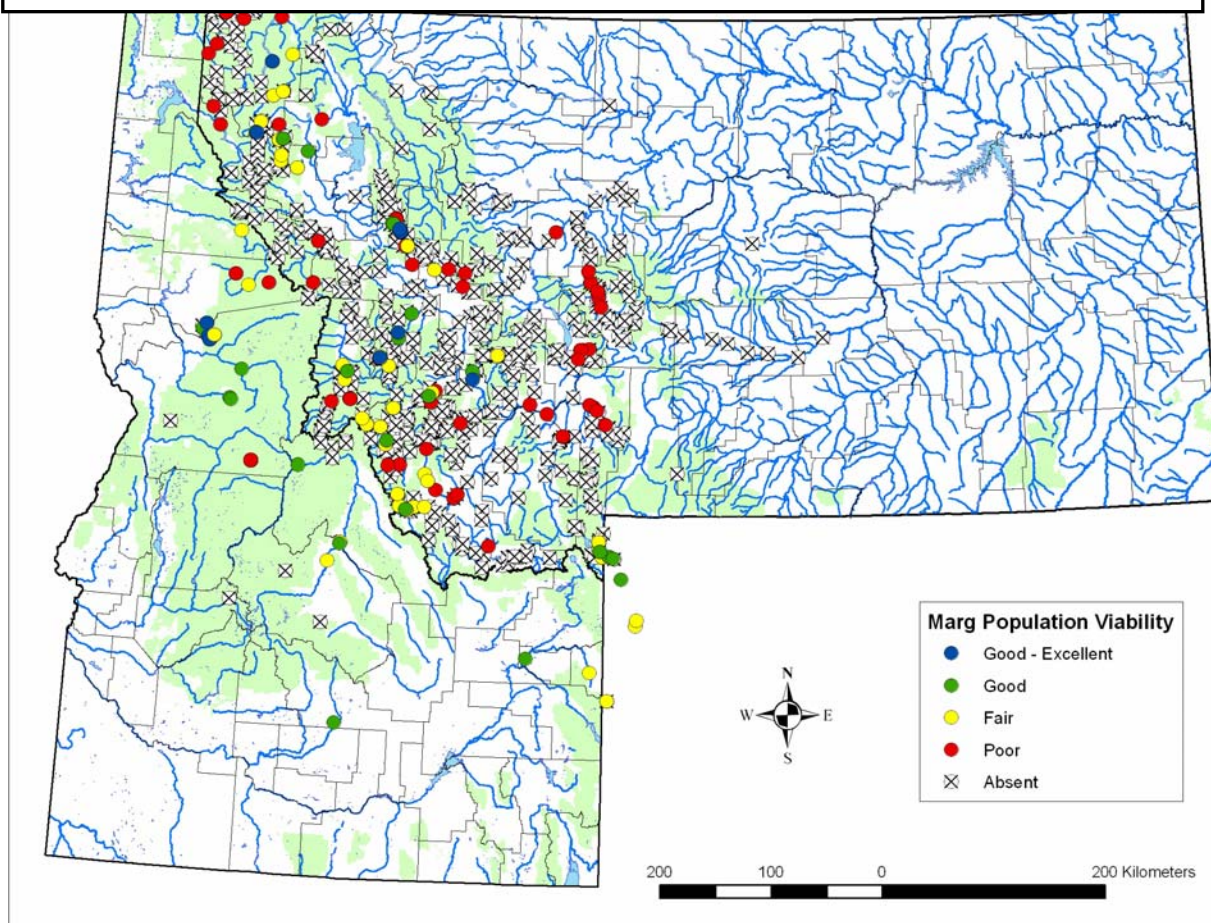


determined to be an invertebrate species of greatest conservation need (Tier I). In 2005, I reported the western pearlshell from two sites on the Smith River in Meagher County; the furthest eastern population of *M.*

falcata reported for the state, and a new viable population in the Clearwater River (Stagliano, unpublished). In 2007, the first year of this project, we focused on systematic surveys of the watersheds containing previously documented or historical records (many were incidental shell or relic records) of *M. falcata*, including site revisits for Gangloff and Gustafson (2000) collections. Results from this year were discouraging, 25 of the ~40 originally reported sites

were extirpated or not viable (D, E ranks) and only 5 new viable populations (A, B ranks) were documented. So, while the updated distribution map shows that the western pearlshell are widespread in western Montana, the viability of these populations is a different story (Map 5). At present, we documented only 14 western pearlshell populations from 8 streams statewide that are ranked A-viability using Nature Serve criteria (Map 5). In a viability analysis, 32 living populations of *M. falcata* were evaluated with quadrat sampling and it was found that only 15 sites had young mussels present. An upcoming project addressing western pearlshell reintroductions into restored stream reaches should provide guidance for the potential of returning this species to previously occupied watersheds.

Map 5. Viability of Western Pearlshell populations in Montana and Idaho based on positive survey points. Recent shells collected in the survey with no live mussels are included as poor records.



Key Watersheds: Within the Upper Missouri River Basin: tributaries to the Beaverhead and Big Hole (Bloody Dick, Deep, and Clam Creeks) and upper Madison River hold viable populations. In the Upper Clark Fork Drainage, Upper Rock Creek Basin in particular Upper Willow, Browns Gulch and Sand Basin Creeks are viable. Viable populations also occur in the Blackfoot-Clearwater Basin (Marshall Creek and Clearwater River) and the Thompson River, Kootenai-Yaak River (East Fisher, Little Wolf, and 5-mile Creek)(see Appendix C).

Western-ridged Mussel *Gonidea angulata*

Global Status: G3

State Status: SH-EX



Abundance: Potentially At Risk Globally, Regionally rare, Locally extirpated, and in decline in adjacent states.

Throughout the course of this study, we found no evidence of the western-ridged mussel, *Gonidea angulata*, in our searches of the Columbia River basin tributaries or other data searches and have listed this species as SH-EX, presumed to be extinct or extirpated from Montana; historical records only (NatureServe 2009). There exist no museum specimens or mention of this species by Elrod (1901), only anecdotal records. Henderson (1924) reported the species locality as the Columbia River, Montana; which as Gangloff and Gustafson (2000) postulated could have been the Clark Fork River or the Kootenai Rivers in the Columbia River basin. The potential for occurrence of the western ridge mussel (*Gonidea angulata*), may have existed in Montana in the lower Clark Fork River before Cabinet Gorge dam formed Noxon Reservoir adversely affecting lotic habitat and fish passage (Frest and Johannes 1995). Since Elrod (1901) reported extensively on mollusks in western Montana, we can only assume he would have mentioned this species had he encountered it during his surveys. Across the border in Idaho, populations were known to occur in much of the Snake River, Clearwater River, Salmon River, and the Little Salmon River (Frest and Johannes 2000). These documented Idaho sites are very distant from where the Clark Fork River enters the state from Montana causing further doubt as to whether this species ever existed in Montana.

Fatmucket *Lampsilis siliquoidea* (Barnes)

Global Status: G5

State Status: S5

Abundance: Globally and Regionally Common. Locally common, but never very abundant, secure populations, our most widely distributed species.



Description: Shell is 4 to 6 inches across. Generally heavy shell with large hinge teeth. Males tend to be thinner; females can be highly inflated laterally. Outside of shell can be light brown, yellowish to tan, often w /greenish rays; inside is white.

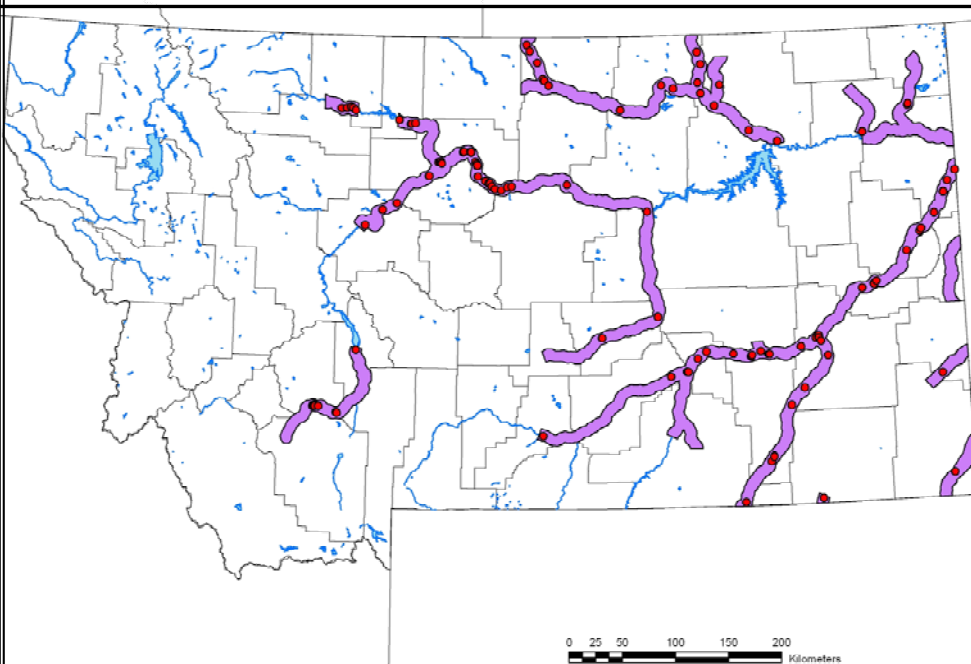
Host Fish: Native species: Freshwater Drum, Catfish, Stonecat, Sturgeons & White Sucker. Introduced Species: Common Carp, Black Bullheads, Centrarchids and Yellow Perch.

Primary Habitat: Prefer side-current areas, runs and pools of medium to large warm prairie rivers with pebble, gravel, sand or silt substrates. In Montana, they can be found as far upstream as the Three Forks of the Missouri River and into the Jefferson River. This mussel is fairly tolerant of silt, cool and warm water temperatures.

Distribution: Prior to this study, there were only 12 fatmucket records in the database, now we have 146 occurrence records (Map 3). We report that the highest population density of the fatmucket is found within the Wild & Scenic Section of the Missouri River between Fort Benton and Judith River landing (avg. 8.2 fatmuckets per hour, n =12 survey reaches,

maximum 38 per hour) with Marias River populations approaching those densities (7 per hour). Our surveys in the Yellowstone River mainstem indicate that this river has much lower mussel densities overall, with

Map 6. Distribution of the Fatmucket in Montana based on positive survey points.



fatmucket catch rates averaging ~1 per hour. While large prairie tributary rivers entering the Yellowstone have higher densities; two sites on the Bighorn River had fatmuckets avg. ~6 per man-hour or about 3 mussels per 50m transect and the Tongue River averaged. ~6 per man-hour.

Key Watersheds: Within the Missouri, Marias, Milk, Yellowstone and Little Missouri River drainages. Highest densities are found in the Missouri River Wild and Scenic reach from Fort Benton to Judith Landing and in the Marias River above Lake Elwell and near the confluence with the Missouri. They are also present in moderate numbers in the Tongue and Bighorn Rivers in the Yellowstone Basin and Battle and Beaver Creeks in the Milk River Basin.



Giant Floater *Pyganodon grandis* (Say)

Global Status: G5

State Status: S4

Abundance: Globally Common, Regionally and Locally common, more secure populations are located in northeastern MT.

Description: Shell is up to 6 inches across. Generally thin, elliptical and light weight. Hinge ligament has no teeth – hence the previous genus name of “Anodonta”. Shell color is brownish to tan-yellow-green; inside is pearly-blue sheen.

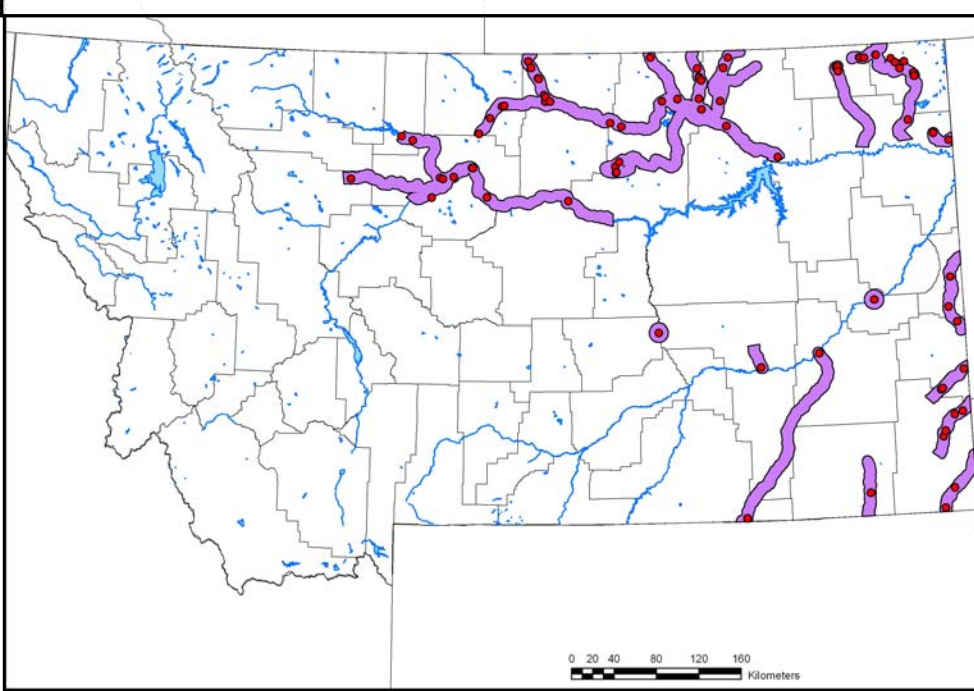


Host Fish: Native species: Iowa Darter, Brook Stickleback, Pearl Dace and Channel Catfish. Introduced Species: Common Carp, Yellow/Black Bullhead, Centrarchids and Yellow Perch.

Primary Habitat: Prefer pool and side channel areas of small to large warm prairie rivers with a mud, sand or gravel substrate. This mussel is tolerant of silt and warm water temperatures. The ability of this species to survive in lentic situations is evident by large mussel beds reported in Lake Elmo outside of Billings (Ken Frazier, pers. comm.) and in Whitetail Reservoir near Scooby (Gangloff and Gustafson 2000).

Distribution: Prior to this study, there were only 16 giant floater records in the database, now we have 92 occurrence records (Map 4). A giant floater shell was found in the Tongue River upstream of the Reservoir in 2004 and a single shell in the Little Powder River in 2007, but live

Map 7. Distribution of the Giant Floater in Montana based on positive survey points.



individuals were not reported (origin of shell potentially dubious). In 2009, we documented the first live records of the giant floater in the Yellowstone Basin at 3 tributary sites (O’Fallon, Little Porcupine, Tongue River), but no evidence has been found of live specimens of this species in the Yellowstone River mainstem.

Key Watersheds: Within the Missouri, Milk and Little Missouri River drainages, more evenly distributed and abundant in the Northern Glaciated Prairie River Basins (Battle, Big Muddy, Frenchman, Poplar River and Rock Creek). Moderate populations in the Little Porcupine and lower Tongue River in the Yellowstone Basin.

INTRODUCED SPECIES ACCOUNTS

Black Sandshell *Ligumia recta* (Lamarck)

Global Status: G5

State Status: SNA

Abundance: Globally Common, Regionally rare (species of concern S2 & S3 in many Midwestern states), locally abundant in MT. Increasing distribution and populations in the Missouri River basin.



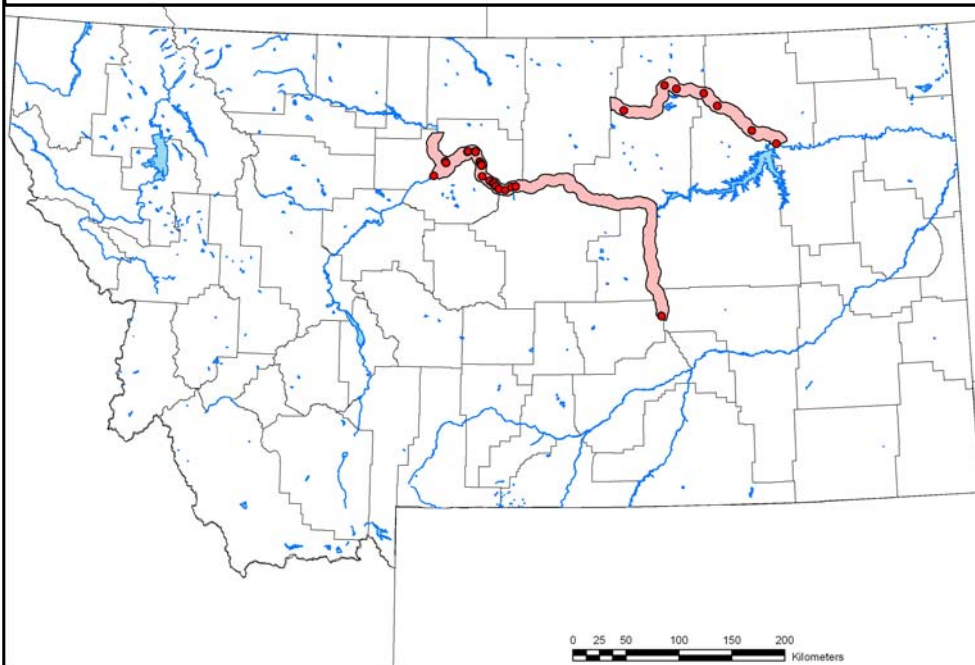
General Description: Elongate, pointed shell normally 4-6 inches long with a convex ventral edge. A large, older specimen may be 7-9 inches (>16cm) making it the largest mussel in MT. Shell interior (nacre) has a purple to pink hue, especially in fresh specimens. Outside of shell can be dark brown to black with a whitish tan area where the umbo (dorsal hinge) has eroded.

Host Fish: Native Species: Sauger. Introduced Species: Walleye, Yellow Perch & Centrarchids.

Primary Habitat: Medium to large cool-warm prairie rivers in riffles or runs with pebble, gravel or firm sand substrates. In the Wild and Scenic Section of the Missouri River, the black sandshell has been observed in higher velocity, cobble substrate areas than any of the other species. This mussel is fairly intolerant of silt and warm water temps.

Distribution: Prior to this study, there were only 9 Black Sandshell records in the database, now we have 41 occurrence records (Map 5). Highest catch rates (4 per man-hour) were reported in the Missouri River Wild and Scenic reach between Coal Banks and Judith Landing.

Map 8. Distribution of the Black Sandshell in Montana based on positive survey points.



A 2009 survey in the Marias River has extended their distribution 8 miles further upstream in that river than previously known from 2008.

Key Watersheds:

In the Missouri, Musselshell and Milk Rivers, spreading upstream from a

Fort Peck Reservoir introduction. Highest densities have been reported in the Missouri River Wild and Scenic reach upstream from Fort Benton to Judith Landing and the Milk River near Dodson downstream to Malta.

Who says mussels can't move?

The Introduced Black Sandshell & Creek Heelsplitter Mussels are linked to fish stocking events in Fort Peck Reservoir when the Missouri River was dammed in 1940. Now the Black Sandshell is abundant ~120 miles upstream @ Fort Benton, MT.

White (Creek) Heelsplitter *Lasmigona complanata* (Barnes)

Global Status: G5

State Status: SNA

Abundance: Regionally common and locally abundant, increasing distribution in the Milk River basin.

Description: Ovate shell rounded and laterally compressed, normally 4-6 inches long and about as high as long. Dorsal margin straight with a large wing (hence “Heel-splitter”). Outside of shell dark brown to black. Young individuals can have green rays (bottom photo). Shell interior (nacre) with a bluish-pearl to white hue.

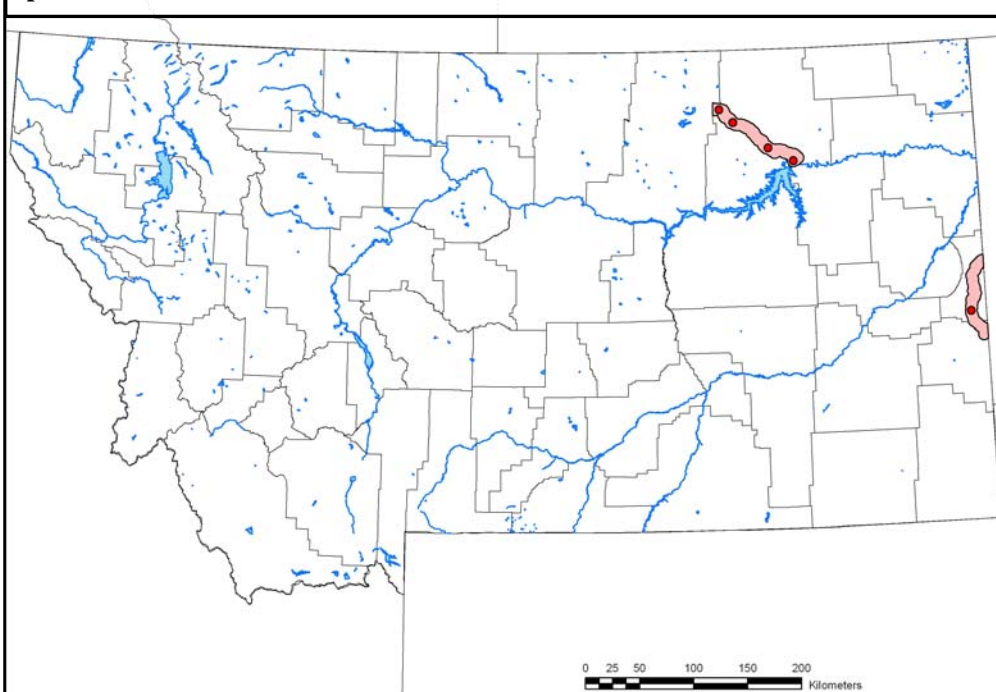


Host Fish: Native species: Sauger. Introduced Species: Common Carp, Green Sunfish, White Crappie, Largemouth Bass

Primary Habitat: Pools in medium to large sluggish prairie rivers with a mud, sand, or fine gravel bottom. They are not found in stream reaches with fast current. This species is tolerant of silt and warm temperatures.

Distribution: Prior to this study, there were only 5 Creek Heelsplitter records in the database, now we have 6 occurrence records (Map 5).

Map 9. Distribution of the White Heelsplitter in Montana based on positive survey points.



Key Watersheds: In the Missouri Basin, known only from the Lower Milk River near the confluence upstream to Bjornberg Bridge, and in Beaver Creek, a tributary of the Little Missouri River. May be native in the Little Missouri River basin, since they are native in North Dakota.

Mapleleaf *Quadrula quadrula* (Rafinesque)

Global Status: G5

State Status: SNA

Abundance: Globally common. Regionally common where native, and locally abundant in the Tongue River.

Description: Ovate shell thick and heavy, normally 3-5 inches long and about as wide as long. Outside of shell tan, “maple-syrup,” (especially in younger individuals) to dark brown. Generally 2 rows of “bumps” pustules on raised ridges. Shell interior with thick teeth and a white hue (nacre).



Host Fish: Native species: Channel Catfish. Introduced Species: Yellow and Black Bullhead

Primary Habitat: Low elevation warmwater, slow-moderate flowing rivers, tolerant of silt and warm water temperatures.

Distribution: The mapleleaf was not included in Montana’s mussel species documented by Gangloff and Gustafson (2000), but was reported a year after the publication in the Tongue River at the 12 Mile Dam location (D. Gustafson, unpublished data). In 2009, our surveys indicated the mapleleaf had good numbers in the Tongue River near the confluence (~10 ind.

Map 10. Distribution of the Mapleleaf in Montana based on positive survey points.



per hr) and below the 12 mile dam location (~8 per hr), but was not found upstream in the Tongue River or live in the Yellowstone mainstem. There was a report of mapleleaf shells near Hysham much further upstream on the Yellowstone

River from the Tongue River (valid identification of the shells, but of questionable origin). It is surprising that this species was not found during our other surveys upstream on the Tongue River, since we believe the point of introduction to the state was Tongue River Reservoir. Outside of Montana this is a widespread and abundant species in Midwestern large, warmwater rivers.

Key Watershed s: Known only from the Tongue River below 12-mile dam and potentially the Lower Yellowstone River, though not documented. Point of Introduction: Tongue River Reservoir.

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Appendix A. Global/State Rank Definitions

Heritage Program Ranks

The international network of Natural Heritage Programs employs a standardized ranking system to denote global (range-wide) and state status. Species are assigned numeric ranks ranging from 1 to 5, reflecting the relative degree to which they are “at-risk”. Rank definitions are given below. A number of factors are considered in assigning ranks — the number, size and distribution of known “occurrences” or populations, population trends (if known), habitat sensitivity, and threat. Factors in a species’ life history that make it especially vulnerable are also considered (e.g., dependence on a specific pollinator).

Global Rank Definitions (NatureServe 2003)

- G1** Critically imperiled because of extreme rarity and/or other factors making it highly vulnerable to extinction
- G2** Imperiled because of rarity and/or other factors making it vulnerable to extinction
- G3** Vulnerable because of rarity or restricted range and/or other factors, even though it may be abundant at some of its locations
- G4** Apparently secure, though it may be quite rare in parts of its range, especially at the periphery
- G5** Demonstrably secure, though it may be quite rare in parts of its range, especially at the periphery

T1-5 Intraspecific Taxon (trinomial) —The status of intraspecific taxa (subspecies or varieties) are indicated by a “T-rank” following the species’ global rank

State Rank Definitions

- S1** At high risk because of extremely limited and potentially declining numbers, extent and/or habitat, making it highly vulnerable to extirpation in the state
- S2** At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to extirpation in the state
- S3** Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas
- S4** Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern
- S5** Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range

Combination Ranks

G#G# or S#S# Range Rank—A numeric range rank (e.g., G2G3) used to indicate uncertainty about the exact status of a taxon

Qualifiers

NR Not ranked

Q Questionable taxonomy that may reduce conservation priority—Distinctiveness of this entity as a taxon at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon in another taxon, with the resulting taxon having a lower-priority (numerically higher) conservation status rank

Appendix B. Statewide Mussel Survey Points

Species Code: WEPE= Western Pearlshell
FAMU= Fatmucket
PYGR= Giant Floater
BLSA= Black sandshell
WHHE=White Heelsplitter
MAPL= Mapleleaf

Viability Code: A- excellent viability, B-good viability, C-fair population, not viable >25 years, D-not viable, extirpated within 25 years, E-verified extant, F-absent, failed to find evidence of a population, H-Historical Verified Site, population now absent) .

Comprehensive Report on the Freshwater Mussels in Montana

4th Code HUC	Basin	Stream	Observation Date	Start_Lat	Start_Long	Mussel species	Viability
10020001	Red Rock	Bloody Dick Creek	25-Jul-2007	45.01411	-113.22919	NONE	F
10020001	Red Rock	Bloody Dick Creek	19-Aug-2007	44.99394	-113.31750	WEPE	B
10020001	Red Rock	Bloody Dick Creek	19-Aug-2007	44.99385	-113.31981	WEPE	D
10020001	Red Rock	Bloody Dick Creek	19-Aug-2007	45.01658	-113.39276	WEPE	C
10020001	Red Rock	Bloody Dick Creek	20-Aug-2007	45.01658	-113.39276	WEPE	C
10020001	Red Rock	Bloody Dick Creek	21-Aug-2007	45.00800	-113.37015	WEPE	B
10020001	Red Rock	Bloody Dick Creek	21-Aug-2007	45.07274	-113.42320	NONE	F
10020001	Red Rock	East Fork Corral Creek	6-Sep-2008	44.57174	-112.19345	NONE	F
10020001	Red Rock	Elk Creek	19-Aug-2007	44.64440	-111.66360	NONE	F
10020001	Red Rock	Fish Creek	30-May-2007	44.69965	-111.90811	NONE	F
10020001	Red Rock	Fish Creek	30-May-2007	44.70215	-111.91606	NONE	F
10020001	Red Rock	Horse Prairie Creek	20-Aug-2007	44.97514	-112.92111	NONE	F
10020001	Red Rock	Horse Prairie Creek	20-Aug-2007	45.01403	-113.22636	WEPE	C
10020001	Red Rock	Horse Prairie Creek	20-Aug-2007	45.01320	-113.22821	WEPE	D
10020001	Red Rock	Horse Prairie Creek	20-Aug-2007	44.97660	-113.25281	NONE	F
10020001	Red Rock	Horse Prairie Creek	21-Aug-2007	45.02031	-113.11093	WEPE	C
10020001	Red Rock	Horse Prairie Creek	21-Aug-2007	45.02526	-113.05644	NONE	F
10020001	Red Rock	Horse Prairie Creek	21-Aug-2007	45.01192	-113.22901	WEPE	D
10020001	Red Rock	Little Basin Creek	2-Jul-2009	44.72558	-112.35733	WEPE	H
10020001	Red Rock	Medicine Lodge Creek	12-Jul-2007	44.87138	-113.00724	NONE	F
10020001	Red Rock	Medicine Lodge Creek	28-Jul-2007	44.98369	-112.98329	NONE	F
10020001	Red Rock	Medicine Lodge Creek	7-Aug-2007	44.87056	-113.00747	NONE	F
10020001	Red Rock	Medicine Lodge Creek	20-Aug-2007	44.75140	-113.03617	NONE	F
10020001	Red Rock	Medicine Lodge Creek	20-Aug-2007	44.87056	-113.00747	NONE	F
10020001	Red Rock	Medicine Lodge Creek	20-Aug-2007	44.94355	-113.01604	WEPE	D
10020001	Red Rock	Medicine Lodge Creek	30-Aug-2007	44.75140	-113.03617	NONE	F
10020001	Red Rock	Painter Creek	23-Oct-2002	45.06530	-113.21530	NONE	F
10020001	Red Rock	Peet Creek	19-Aug-2008	44.55947	-112.07859	NONE	F
10020001	Red Rock	Price Creek	19-Aug-2008	44.59392	-112.13058	NONE	F
10020001	Red Rock	Red Rock River	15-Jul-2007	44.66404	-112.50269	NONE	F
10020001	Red Rock	Red Rock River	15-Jul-2007	44.65547	-112.41129	NONE	F
10020001	Red Rock	Red Rock River	15-Jul-2007	44.69343	-112.65373	NONE	F
10020001	Red Rock	Red Rock River	15-Jul-2007	44.73240	-112.69187	NONE	F
10020001	Red Rock	Red Rock River	15-Jul-2007	44.91555	-112.82485	NONE	F
10020001	Red Rock	Red Rock River	17-Aug-2007	44.64924	-112.06388	NONE	F
10020001	Red Rock	Red Rock River	17-Aug-2007	44.65519	-111.92918	NONE	F
10020001	Red Rock	Red Rock River	17-Aug-2007	44.64753	-112.05749	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

10020001	Red Rock	Red Rock River	17-Aug-2007	44.64759	-112.08113	NONE	F
10020001	Red Rock	Red Rock River	20-Aug-2007	44.63948	-112.13846	NONE	F
10020001	Red Rock	Red Rock River	20-Aug-2007	44.64738	-112.06622	NONE	F
10020001	Red Rock	Red Rock River	20-Aug-2007	44.63854	-112.13790	NONE	F
10020001	Red Rock	Red Rock River	20-Aug-2007	44.64219	-111.99532	NONE	F
10020001	Red Rock	Red Rock River	20-Aug-2007	44.64280	-112.03622	NONE	F
10020001	Red Rock	Red Rock River	31-Aug-2007	44.64738	-112.06622	NONE	F
10020001	Red Rock	Red Rock River	31-Aug-2007	44.84600	-112.77220	NONE	F
10020001	Red Rock	Red Rock River	31-Aug-2007	44.84640	-112.77290	NONE	F
10020001	Red Rock	Red Rock River	31-Aug-2007	44.84700	-112.77450	NONE	F
10020001	Red Rock	Red Rock River	19-Aug-2008	44.84770	-112.77780	NONE	F
10020001	Red Rock	Sage Creek	20-Aug-2007	44.73456	-112.65339	NONE	F
10020001	Red Rock	Selway Creek	30-Jun-2006	45.10271	-113.41889	WEPE	D
10020001	Red Rock	Selway Creek	20-Aug-2008	45.09291	-113.23362	NONE	F
10020001	Red Rock	Selway Creek	20-Aug-2008	45.11289	-113.42200	WEPE	C
10020001	Red Rock	Shineberger Creek	20-Aug-2007	44.54544	-112.42915	NONE	F
10020001	Red Rock	Trail Creek	21-Aug-2007	44.98246	-113.30718	NONE	F
10020001	Red Rock	Trail Creek	26-Oct-2009	44.98854	113.29896	WEPE	B
10020001	Red Rock	Trail Creek	26-Oct-2009	44.98588	-113.30545	WEPE	C
10020001	Red Rock	Trail Creek	4-Nov-2009	44.98298	113.30647	WEPE	C
10020001	Red Rock	West Fork Price Creek	7-Sep-2008	44.56156	-112.14018	NONE	F
10020001	Red Rock	West Fork Price Creek	7-Sep-2008	44.56613	-112.13933	NONE	F
10020002	Beaverhead	Beaverhead River	19-Aug-2007	45.13087	-112.73960	WEPE	D
10020002	Beaverhead	Beaverhead River	19-Aug-2007	45.10067	-112.77760	WEPE	D
10020002	Beaverhead	Beaverhead River	19-Aug-2007	45.23484	-112.62620	NONE	F
10020002	Beaverhead	Beaverhead River	21-Aug-2007	45.09817	-112.77702	NONE	F
10020002	Beaverhead	Beaverhead River trib	19-Aug-2007	45.13092	-112.73552	NONE	F
10020002	Beaverhead	Blacktail Deer Creek	15-Jul-2007	45.00528	-112.44510	NONE	F
10020002	Beaverhead	Cottonwood Creek	22-Jul-2004	44.93326	-112.45056	NONE	F
10020002	Beaverhead	East Creek	30-Jun-2006	45.10213	-113.41494	NONE	F
10020002	Beaverhead	Grasshopper Creek	29-Jun-2007	45.23135	-113.07997	WEPE	C
10020002	Beaverhead	Grasshopper Creek	30-Jun-2007	45.28294	-113.11921	WEPE	C
10020002	Beaverhead	Grasshopper Creek	25-Jul-2007	45.48107	-113.11014	WEPE	H
10020002	Beaverhead	Grasshopper Creek	19-Aug-2007	45.15978	-112.98619	WEPE	D
10020003	Ruby	Mill Creek	15-Jul-2004	45.45816	-112.28003	NONE	F
10020003	Ruby	North Fork Greenhorn Creek	15-Jul-2004	45.12194	-112.03920	NONE	F
10020003	Ruby	Ruby River	13-Aug-2007	45.37467	-112.13815	NONE	F
10020004	Big Hole	Bear Creek	7-Jul-2005	45.59780	-110.91090	NONE	F
10020004	Big Hole	Bear Creek	23-Jun-2007	45.87715	-113.06974	NONE	F
10020004	Big Hole	Berry Creek	14-Sep-2006	45.25263	-113.50551	NONE	F
10020004	Big Hole	Big Hole River	22-May-2003	45.70119	-112.73618	NONE	F
10020004	Big Hole	Big Hole River	17-Aug-2005	45.62239	-112.69037	WEPE	H
10020004	Big Hole	Big Hole River	30-Jun-2007	45.31248	-113.44893	NONE	F
10020004	Big Hole	Big Hole River	26-Jul-2007	45.85939	-113.08424	WEPE	D
10020004	Big Hole	Big Hole River	11-Aug-2007	45.85972	-113.08361	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

10020004	Big Hole	Big Hole River	11-Aug-2007	45.48913	-112.69311	NONE	F
10020004	Big Hole	Big Hole River	19-Aug-2007	45.43611	-113.45875	NONE	F
10020004	Big Hole	Big Hole River	19-Aug-2007	45.88315	-113.11738	NONE	F
10020004	Big Hole	Big Hole River	19-Aug-2007	45.78636	-112.91513	NONE	F
10020004	Big Hole	Big Lake Creek	15-May-1986	45.56618	-113.49272	NONE	F
10020004	Big Hole	Big Lake Creek	15-May-1986	45.44481	-113.59939	NONE	F
10020004	Big Hole	Bigfoot Creek	7-Jul-2005	46.10724	-112.13321	NONE	F
10020004	Big Hole	Birch Creek	13-Aug-2007	45.38117	-112.76881	NONE	F
10020004	Big Hole	Birch Creek	19-Aug-2007	45.38117	-112.76881	NONE	F
10020004	Big Hole	California Creek	19-Aug-2007	45.95510	-113.03880	WEPE	D
10020004	Big Hole	Camp Creek	23-Jul-2005	45.65638	-112.61443	NONE	F
10020004	Big Hole	Canyon Creek	7-Aug-2006	45.62536	-112.93685	NONE	F
10020004	Big Hole	Canyon Creek	7-Aug-2006	45.67674	-112.85617	NONE	F
10020004	Big Hole	Chief Joseph Trail Creek	30-Jun-2007	45.64998	-113.70241	NONE	F
10020004	Big Hole	Chief Joseph Trail Creek	30-Jun-2007	45.65869	-113.81157	WEPE	D
10020004	Big Hole	Clam Creek	30-Jun-2006	45.79933	-113.51334	WEPE	C
10020004	Big Hole	Clam Creek	13-Jul-2009	45.80171	-113.52563	WEPE	A
10020004	Big Hole	David Creek	29-Jun-2007	45.53364	-113.03275	NONE	F
10020004	Big Hole	Deep Creek	7-Jul-2005	45.91183	-113.11316	WEPE	B
10020004	Big Hole	Deno Creek	28-Jun-2007	45.74889	-113.03010	NONE	F
10020004	Big Hole	Divide Creek	19-Aug-2007	45.75174	-112.74522	NONE	F
10020004	Big Hole	Doolittle Creek	19-Jun-2003	45.73778	-113.37944	NONE	F
10020004	Big Hole	Doolittle Creek	10-Aug-2006	45.71780	-113.34530	NONE	F
10020004	Big Hole	Doolittle Creek	10-Aug-2006	45.71283	-113.33858	NONE	F
10020004	Big Hole	Doolittle Creek	19-Jul-2007	45.71749	-113.35008	NONE	F
10020004	Big Hole	Fish Creek	13-Sep-2006	45.79925	-112.40001	NONE	F
10020004	Big Hole	Fishtrap Creek	30-Jun-2006	45.87000	-113.22750	NONE	F
10020004	Big Hole	Fourth of July Creek	28-Jun-2007	45.65883	-113.06054	NONE	F
10020004	Big Hole	Fox Creek	30-Jun-2006	45.27194	-112.35861	NONE	F
10020004	Big Hole	French Creek	30-Jun-2006	45.94090	-113.07420	WEPE	C
10020004	Big Hole	French Creek	30-Jun-2006	45.91520	-113.10600	WEPE	C
10020004	Big Hole	Gold Creek	23-Jul-2006	45.61560	-113.08420	NONE	F
10020004	Big Hole	Govenour Creek	30-Jun-2007	45.35115	-113.40926	WEPE	D
10020004	Big Hole	Grouse Creek	28-Jun-2007	45.68259	-113.07309	NONE	F
10020004	Big Hole	Grouse Creek	28-Jun-2007	45.68687	-113.08568	NONE	F
10020004	Big Hole	Happy Creek	29-Jun-2007	45.53477	-113.07682	NONE	F
10020004	Big Hole	Jackson Creek	27-Jun-2007	45.66056	-110.84778	NONE	F
10020004	Big Hole	Jacobsen Creek	1-Sep-2006	45.52999	-113.05441	NONE	F
10020004	Big Hole	Jacobsen Creek	29-Jun-2007	45.53416	-113.03519	NONE	F
10020004	Big Hole	Jacobsen Creek	29-Jun-2007	45.52754	-113.07172	NONE	F
10020004	Big Hole	Jacobsen Creek trib#2	29-Jun-2007	45.53110	-113.06364	NONE	F
10020004	Big Hole	Jacobsen Creek trib#2	29-Jun-2007	45.53110	-113.06364	NONE	F
10020004	Big Hole	Jerry Creek	1-May-1995	45.82857	-112.87694	NONE	F
10020004	Big Hole	Jerry Creek	6-Sep-2006	45.79556	-112.90165	NONE	F
10020004	Big Hole	LaMarche Creek	16-Jul-2003	45.91080	-113.21720	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

10020004	Big Hole	LaMarche Creek	23-Jul-2006	45.87830	-113.19860	NONE	F
10020004	Big Hole	Miner Creek	14-Sep-2006	45.33729	-113.54459	WEPE	D
10020004	Big Hole	Moose Creek	7-Jul-2005	45.71377	-112.70505	NONE	F
10020004	Big Hole	Moose Creek	13-Sep-2006	45.70042	-112.73557	WEPE	D
10020004	Big Hole	Moose Creek	23-Jun-2007	45.74373	-112.67081	NONE	F
10020004	Big Hole	Moose Creek	19-Aug-2007	45.76720	-112.56764	NONE	F
10020004	Big Hole	Moose Creek	19-Aug-2007	45.74195	-112.67339	NONE	F
10020004	Big Hole	Moose Creek Spring	28-Jun-2007	45.63366	-113.07452	NONE	F
10020004	Big Hole	Mussingbrod Creek	13-Aug-2007	45.73220	-113.57080	NONE	F
10020004	Big Hole	North Fork Big Hole River	30-Jun-2007	45.64353	-113.65279	WEPE	C
10020004	Big Hole	North Fork Big Hole River	30-Jun-2007	45.64417	-113.65194	WEPE	C
10020004	Big Hole	North Fork Big Hole River	19-Aug-2007	45.70528	-113.45944	NONE	F
10020004	Big Hole	North Fork Big Hole River	19-Aug-2007	45.64446	-113.65011	WEPE	C
10020004	Big Hole	Odell Creek	20-Sep-2006	45.55906	-113.20129	NONE	F
10020004	Big Hole	Pattengill Creek	28-Jun-2007	45.68218	-113.06323	NONE	F
10020004	Big Hole	Pintlar Creek	1-May-1995	45.90720	-113.48110	NONE	F
10020004	Big Hole	Pintlar Creek	23-Jun-2005	45.90731	-113.48004	NONE	F
10020004	Big Hole	Prairie Creek	4-Oct-2008	45.73958	-113.87300	NONE	F
10020004	Big Hole	Ruby Creek	14-Sep-2001	45.54358	-113.75841	NONE	F
10020004	Big Hole	Seymour Creek	19-Jul-1993	45.99850	-113.18720	NONE	F
10020004	Big Hole	Seymour Creek	19-Jul-2006	45.98970	-113.18440	NONE	F
10020004	Big Hole	Sourdough Creek	27-Jun-2007	45.64250	-111.02944	NONE	F
10020004	Big Hole	Spring Gulch	26-Jun-2009	45.83646	-112.91764	NONE	F
10020004	Big Hole	Fourth of July Creek	28-Jun-2007	45.65830	-113.06203	NONE	F
10020004	Big Hole	Steel Creek	10-Aug-2006	45.59906	-113.34986	NONE	F
10020004	Big Hole	Stine Creek	28-Jun-2007	45.71932	-113.02850	NONE	F
10020004	Big Hole	Swamp Creek	23-Jun-2007	45.65889	-113.46972	NONE	F
10020004	Big Hole	Thompson Creek	13-Jul-2009	45.79962	-113.51193	WEPE	C
10020004	Big Hole	Trail Creek	30-Jun-2006	45.70425	-113.86631	WEPE	B
10020004	Big Hole	Trail Creek	23-Jul-2006	45.65670	-113.80940	WEPE	C
10020004	Big Hole	Trail Creek	12-Aug-2007	45.67055	-113.82670	NONE	F
10020004	Big Hole	Trapper Creek	15-Sep-2006	45.63345	-112.87835	NONE	F
10020004	Big Hole	Twelvemile Creek	21-Sep-2006	45.97458	-113.09907	NONE	F
10020004	Big Hole	West Fork Jimmie New	7-Jul-2005	45.83977	-112.95124	NONE	F
10020004	Big Hole	West Fork Jimmie New	7-Jul-2005	45.83977	-112.95124	NONE	F
10020004	Big Hole	Willow Creek	23-Jul-2006	45.43810	-112.74220	NONE	F
10020004	Big Hole	Willow Creek	7-Jul-2007	45.44806	-112.82777	NONE	F
10020004	Big Hole	Willow Creek	2-Oct-2008	45.44810	-112.82785	NONE	F
10020004	Big Hole	Wisconsin Creek	10-Aug-2003	45.59850	-113.34226	NONE	F
10020004	Big Hole	Wisconsin Creek	16-Jul-2007	45.59667	-113.34027	NONE	F
10020004	Big Hole	Wise River	1-May-1995	45.73461	-113.01626	NONE	F
10020004	Big Hole	Wise River	13-Jul-2005	45.66396	-113.06375	NONE	F
10020004	Big Hole	Wise River	1-Sep-2006	45.61068	-113.09101	NONE	F
10020004	Big Hole	Wise River	28-Jun-2007	45.79310	-112.95030	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

10020004	Big Hole	Wise River	28-Jun-2007	45.54311	-113.08388	NONE	F
10020004	Big Hole	Wise River	28-Jun-2007	45.79206	-112.95128	NONE	F
10020004	Big Hole	Wise River	29-Jun-2007	45.61450	-113.08940	NONE	F
10020004	Big Hole	Wyman Creek	1-Sep-2006	45.54908	-113.14712	NONE	F
10020005	Jefferson	Baggs Creek	8-Sep-2006	46.39124	-112.59520	NONE	F
10020005	Jefferson	Beefstraight Creek	11-Sep-2006	45.98114	-112.83307	NONE	F
10020005	Jefferson	Beefstraight Creek	11-Sep-2006	45.98341	-112.82820	NONE	F
10020005	Jefferson	Big Pipestone Creek	13-Aug-2007	45.87582	-112.17989	NONE	F
10020005	Jefferson	Bison Creek	7-Sep-2006	46.25268	-112.34045	NONE	F
10020005	Jefferson	Fish Creek	23-Jun-2005	45.80618	-112.37225	NONE	F
10020005	Jefferson	Halfway Creek	22-Sep-2006	45.95483	-112.29862	WEPE	D
10020005	Jefferson	Hells Canyon Creek	25-Sep-2006	45.65807	-112.38778	NONE	F
10020005	Jefferson	Jefferson River	30-Jul-1996	45.80350	-111.75080	FAMU	C
10020005	Jefferson	Jefferson River	9-Sep-2009	45.85087	-111.96903	FAMU	C
10020005	Jefferson	Jefferson River	9-Sep-2009	45.85087	-111.96903	WEPE	D
10020005	Jefferson	Jefferson River	11-Sep-2009	45.85849	-112.01252	FAMU	D
10020005	Jefferson	Jefferson River	29-Apr-2010	45.79809	-111.74135	FAMU	C
10020005	Jefferson	South Boulder River	25-Sep-2006	45.75975	-111.95928	NONE	F
10020005	Jefferson	State Creek	7-Jul-2005	46.10048	-112.14178	NONE	F
10020005	Jefferson	Whitetail Creek	19-Jul-2005	45.96225	-112.16093	NONE	F
10020006	Boulder	Basin Creek	1-May-1995	46.27460	-112.26588	NONE	F
10020006	Boulder	Bison Creek	23-Jun-2005	46.25498	-112.34190	NONE	F
10020006	Boulder	Bison Creek	22-Aug-2007	46.25498	-112.34190	NONE	F
10020006	Boulder	Bison Creek	12-Jul-2009	46.26025	-112.32941	NONE	F
10020006	Boulder	Boulder River	7-Sep-2006	45.87071	-111.94280	WEPE	D
10020006	Boulder	Boulder River	6-Aug-2007	45.96992	-111.88973	NONE	H
10020006	Boulder	Boulder River	6-Aug-2007	46.11356	-111.91930	NONE	F
10020006	Boulder	Boulder River	6-Aug-2007	46.17734	-112.03230	NONE	F
10020006	Boulder	Boulder River	6-Aug-2007	46.26231	-112.34271	NONE	F
10020006	Boulder	Boulder River	22-Aug-2007	46.25427	-112.47239	NONE	F
10020006	Boulder	Boulder River	12-Jul-2009	46.26041	-112.32987	WEPE	C
10020006	Boulder	Boulder River	12-Jul-2009	46.26041	-112.32987	WEPE	D
10020006	Boulder	Elkhorn Creek	15-Jul-2007	46.25127	-111.96381	NONE	F
10020006	Boulder	High Ore Creek	23-Jul-2005	46.28066	-112.20274	NONE	F
10020006	Boulder	Little Boulder Creek	6-Aug-2007	46.20042	-112.09353	NONE	F
10020006	Boulder	Little Boulder River	2-Oct-2008	46.17040	-112.20250	NONE	F
10020006	Boulder	Muskrat Creek	23-Jul-2005	46.22863	-112.09052	NONE	F
10020006	Boulder	Muskrat Creek	6-Aug-2007	46.26495	-112.08293	NONE	F
10020006	Boulder	Muskrat Creek	22-Aug-2007	46.28189	-112.07314	NONE	F
10020006	Boulder	Muskrat Creek	22-Aug-2007	46.30613	-112.02909	NONE	F
10020006	Boulder	Red Rock Creek	5-Sep-1997	46.27610	-112.33050	NONE	F
10020006	Boulder	Rock Creek	28-Jun-2008	46.25775	-112.50317	NONE	F
10020006	Boulder	Rock Creek	28-Jun-2008	46.26149	-112.51865	NONE	F
10020006	Boulder	Swamp Creek	15-Jul-2007	45.60209	-113.55934	NONE	F
10020007	Madison	Cabin Creek	29-Jul-2007	44.87640	-111.34560	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

10020007	Madison	Cherry Creek	14-Jul-2008	45.61977	-111.54643	NONE	F
10020007	Madison	Cherry Creek	15-Jul-2008	45.62191	-111.54842	WEPE	D
10020007	Madison	Cherry Creek	15-Jul-2008	45.62143	-111.54659	WEPE	D
10020007	Madison	Cherry Creek	15-Jul-2008	45.62285	-111.54975	WEPE	D
10020007	Madison	Cougar Creek	31-Jul-2007	44.71508	-111.11069	WEPE	C
10020007	Madison	Duck Creek	31-Jul-2007	44.77958	-111.11499	NONE	F
10020007	Madison	Duck Creek	31-Jul-2007	44.77998	-111.11357	NONE	F
10020007	Madison	Duck Creek	16-Jul-2008	44.77956	-111.11249	WEPE	B
10020007	Madison	Elk Creek	15-Jul-2007	45.62670	-111.41430	NONE	F
10020007	Madison	Fourmile Creek	15-Jul-2007	45.34124	-110.23215	NONE	F
10020007	Madison	Hot Springs Creek	15-Jul-2008	45.58564	-111.59409	NONE	F
10020007	Madison	Jack Creek	15-Jul-2007	45.35338	-111.54909	NONE	F
10020007	Madison	Madison River	13-Jul-2002	44.64702	-110.93216	NONE	F
10020007	Madison	Madison River	31-Jul-2007	44.66194	-110.99187	WEPE	C
10020007	Madison	Madison River	31-Jul-2007	44.70339	-111.09805	WEPE	C
10020007	Madison	Madison River	31-Jul-2007	44.70484	-111.09695	WEPE	C
10020007	Madison	Madison River	31-Jul-2007	44.65740	-111.06970	WEPE	C
10020007	Madison	Madison River	31-Jul-2007	45.58510	-111.57629	NONE	F
10020007	Madison	Madison River	15-Jul-2008	45.57462	-111.59357	NONE	F
10020007	Madison	Madison River	16-Jul-2008	44.77988	-111.11298	WEPE	C
10020007	Madison	Madison River	16-Jul-2008	45.59050	-111.57620	WEPE	C
10020007	Madison	Madison River	15-Jul-2008	45.59978	-111.57332	NONE	H
10020007	Madison	Meadow Creek	15-Jul-2008	45.44380	-111.71891	NONE	F
10020007	Madison	Meadow Creek	15-Jul-2008	45.44259	-111.71032	NONE	F
10020007	Madison	Middle Fork of West Fork	7-Aug-2007	45.29219	-111.38807	NONE	F
10020007	Madison	No Man Creek	29-Jul-1998	45.11550	-111.49810	NONE	F
10020007	Madison	North Fork Meadow Creek	14-Jul-2008	45.65757	-111.89389	NONE	F
10020007	Madison	O'dell Spring Creek	15-Jul-2007	45.30711	-111.73920	NONE	F
10020007	Madison	South Fork Madison River	31-Jul-2007	44.65752	-111.15062	NONE	F
10020007	Madison	South Fork Madison River	31-Jul-2007	44.67870	-111.19432	NONE	F
10020007	Madison	West Fork Beaver Creek	29-Jul-2007	44.90506	-111.36955	NONE	F
10020007	Madison	West Fork Beaver Creek	29-Jul-2007	44.90346	-111.39455	NONE	F
10020008	Gallatin	Beehive Basin	10-Sep-1996	45.28692	-111.38665	NONE	F
10020008	Gallatin	Bozeman Creek	1-Aug-2007	45.69977	-111.02751	NONE	F
10020008	Gallatin	East Fork Grasshopper Creek	2-Aug-2007	46.54322	-110.74831	NONE	F
10020008	Gallatin	East Gallatin River	1-Aug-2007	45.88219	-111.24772	WEPE	D
10020008	Gallatin	East Gallatin River	1-Aug-2007	45.87345	-111.23249	WEPE	D
10020008	Gallatin	East Gallatin River	1-Aug-2007	45.86278	-111.20226	WEPE	D
10020008	Gallatin	East Gallatin River	1-Aug-2007	45.83885	-111.16070	WEPE	D
10020008	Gallatin	East Gallatin River	1-Aug-2007	45.82659	-111.14189	WEPE	H
10020008	Gallatin	East Gallatin River	1-Aug-2007	45.72568	-111.06629	WEPE	E
10020008	Gallatin	East Gallatin River	1-Aug-2007	45.69916	-111.02348	NONE	H
10020008	Gallatin	Elkhorn Creek	28-Jul-2006	45.14939	-111.21942	NONE	F
10020008	Gallatin	Elkhorn Creek	28-Jul-2006	45.14547	-111.21210	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

10020008	Gallatin	Gallatin River	30-Jul-1991	45.07036	-111.19460	NONE	F
10020008	Gallatin	Gallatin River	15-Jul-2007	45.67107	-111.20828	NONE	F
10020008	Gallatin	Gallatin River	15-Jul-2007	45.73944	-111.21866	NONE	F
10020008	Gallatin	Gallatin River	1-Aug-2007	45.73680	-111.21862	NONE	F
10020008	Gallatin	Gallatin River	1-Aug-2007	45.29858	-111.20384	NONE	F
10020008	Gallatin	Gallatin River	1-Aug-2007	45.42645	-111.23251	NONE	F
10020008	Gallatin	Gallatin River	1-Aug-2007	45.28158	-111.22520	NONE	F
10020008	Gallatin	Gallatin River	7-Aug-2007	45.48485	-111.27023	NONE	F
10020008	Gallatin	Gallatin River	27-Aug-2008	45.28158	-111.22520	NONE	F
10020008	Gallatin	Gallatin River	27-Aug-2008	45.05445	-111.15644	NONE	F
10020008	Gallatin	Grayling Creek	1-Aug-2007	44.80197	-111.10935	NONE	F
10020008	Gallatin	Grayling Creek	1-Aug-2007	44.85284	-111.06271	NONE	F
10020008	Gallatin	Middle Fork of West Fork	30-Jul-1999	45.29389	-111.41312	NONE	F
10020008	Gallatin	Rocky Creek	29-Aug-2009	45.65405	-110.94317	NONE	F
10020008	Gallatin	SF West Fork Gallatin River	30-Jul-1999	45.26713	-111.27164	NONE	F
10020008	Gallatin	Storm Castle Creek	1-Aug-2007	45.43920	-111.19838	NONE	F
10030101	Upper Missouri	Battle Creek	23-Jul-2009	46.30121	-110.95022	NONE	F
10030101	Upper Missouri	Canyon Creek trib	7-Aug-2007	46.80616	-112.24816	NONE	F
10030101	Upper Missouri	Confederate Creek	2-Apr-1998	46.57600	-111.45300	NONE	F
10030101	Upper Missouri	Crow Creek	1-May-1995	46.25517	-111.67165	NONE	F
10030101	Upper Missouri	Deep Creek	2-Apr-1998	46.33030	-111.27400	WEPE	D
10030101	Upper Missouri	Dry Creek	6-Aug-2007	46.26099	-111.34025	NONE	F
10030101	Upper Missouri	Dry Creek	6-Aug-2007	46.25012	-111.39715	WEPE	H
10030101	Upper Missouri	Dry Creek	23-Jul-2009	46.23896	-111.21787	NONE	F
10030101	Upper Missouri	Dry Creek	23-Jul-2009	46.24064	-111.24630	NONE	F
10030101	Upper Missouri	Dry Creek	23-Jul-2009	46.25038	-111.27254	NONE	F
10030101	Upper Missouri	Dry Creek	23-Jul-2009	46.23126	-111.19307	NONE	F
10030101	Upper Missouri	Duck Creek	2-Apr-1998	46.48680	-111.38650	NONE	F
10030101	Upper Missouri	Duck Creek	2-Apr-1998	46.48350	-111.35750	NONE	F
10030101	Upper Missouri	Greyson Creek	23-Jul-2009	46.28689	-111.26069	NONE	F
10030101	Upper Missouri	Hardgrove Creek	7-Aug-2007	47.20906	-112.27739	NONE	F
10030101	Upper Missouri	Hay Creek	23-Jul-2009	46.24245	-111.00628	NONE	F
10030101	Upper Missouri	Indian Creek	3-Apr-1998	46.31680	-111.63182	NONE	F
10030101	Upper Missouri	Indian Creek	17-Jul-2005	46.32790	-111.61259	NONE	F
10030101	Upper Missouri	Indian Creek	17-Jul-2005	46.31148	-111.66750	NONE	F
10030101	Upper Missouri	LaMarche Creek	7-Jul-2005	45.87659	-113.19838	NONE	F
10030101	Upper Missouri	Little Prickly Pear Creek	7-Aug-2007	46.79768	-112.36914	NONE	F
10030101	Upper Missouri	Little Prickly Pear Creek	7-Aug-2007	46.78749	-112.40737	NONE	F
10030101	Upper Missouri	Little Prickly Pear Creek	7-Aug-2007	47.00544	-112.07147	NONE	F
10030101	Upper Missouri	Little Prickly Pear Creek	31-Aug-2007	46.90260	-112.12404	NONE	F
10030101	Upper Missouri	Little Prickly Pear Creek	31-Aug-2007	46.85569	-112.17499	NONE	F
10030101	Upper Missouri	Lump Gulch	23-Jul-2005	46.47729	-112.07694	NONE	F
10030101	Upper Missouri	Medicine Rock Creek	23-Jul-2005	46.92880	-112.15036	NONE	F
10030101	Upper Missouri	Prickly Pear Creek	22-Aug-2007	46.37769	-112.03094	NONE	F
10030101	Upper Missouri	Prickly Pear Creek	22-Aug-2007	46.46870	-111.98316	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

10030101	Upper Missouri	Prickly Pear Creek	22-Aug-2007	46.54062	-111.92699	NONE	F
10030101	Upper Missouri	Prickly Pear Creek	29-Aug-2009	46.59219	-111.92127	NONE	F
10030101	Upper Missouri	Sixteenmile Creek	23-Jul-2009	46.27159	-110.80546	NONE	F
10030101	Upper Missouri	Tepee Creek	9-Oct-2003	46.43255	-111.85840	NONE	F
10030102	Upper Missouri - Dearborn	Dearborn River	7-Aug-2007	47.19912	-112.09674	NONE	F
10030102	Upper Missouri - Dearborn	Dearborn River	7-Aug-2007	47.21904	-112.24185	NONE	F
10030102	Upper Missouri - Dearborn	Flat Creek	7-Aug-2007	47.25204	-112.06489	NONE	F
10030102	Upper Missouri - Dearborn	Hardgrove Creek	2-Aug-2007	47.19125	-112.31133	NONE	F
10030102	Upper Missouri - Dearborn	Highwood Creek	25-Jul-2007	47.61337	-110.90017	NONE	F
10030102	Upper Missouri - Dearborn	Highwood Creek	25-Jul-2007	47.49205	-110.67473	NONE	F
10030102	Upper Missouri - Dearborn	Highwood Creek	20-Aug-2009	47.64220	-110.93442	NONE	F
10030102	Upper Missouri - Dearborn	Highwood Creek	20-Aug-2009	47.58224	-110.80608	NONE	F
10030102	Upper Missouri - Dearborn	Shonkin Creek	19-Aug-2009	47.81863	-110.63383	NONE	F
10030102	Upper Missouri - Dearborn	Shonkin Creek	26-Aug-2009	47.77508	-110.64989	PYGR	D
10030102	Upper Missouri - Dearborn	Shonkin Creek	26-Aug-2009	47.77955	-110.64707	NONE	F
10030103	Smith	Beaver Creek	23-Jul-2006	46.74395	-111.40850	NONE	F
10030103	Smith	Beaver Creek	23-Jul-2006	46.75185	-111.19135	NONE	F
10030103	Smith	Calf Creek	15-Jul-2007	46.84788	-110.95653	NONE	F
10030103	Smith	Camas Creek	30-Aug-2007	46.67809	-111.19502	NONE	F
10030103	Smith	Cottonwood Creek	25-Jul-2007	46.42819	-110.85550	NONE	F
10030103	Smith	Deep Creek	2-Aug-2007	46.32448	-111.29467	NONE	F
10030103	Smith	Deep Creek	6-Aug-2007	46.32671	-111.36874	WEPE	D
10030103	Smith	Deep Creek	30-Aug-2007	46.32755	-111.27741	NONE	F
10030103	Smith	Deep Creek	1-Jul-2008	47.10639	-111.27396	NONE	F
10030103	Smith	Deep Creek	17-Jul-2008	46.33202	-111.26528	NONE	F
10030103	Smith	Eagle Creek	30-Aug-2007	46.82843	-111.16463	NONE	F
10030103	Smith	Four Mile Creek	17-Jul-2008	46.58714	-110.79192	NONE	F
10030103	Smith	Four Mile Creek	17-Jul-2008	46.55023	-110.74573	NONE	F
10030103	Smith	Hound Creek	7-Aug-2007	47.21526	-111.39342	NONE	F
10030103	Smith	Logging Creek	13-Jul-2009	47.09678	-111.01477	NONE	F
10030103	Smith	Moose Creek	20-Aug-2007	46.85117	-110.86066	NONE	F
10030103	Smith	Moose Creek	20-Aug-2007	46.85117	-110.86066	NONE	F
10030103	Smith	Newlan Creek	30-Aug-2007	46.59156	-111.04922	NONE	F
10030103	Smith	North Fork Smith River	2-Aug-2007	46.68022	-110.71337	NONE	F
10030103	Smith	North Fork Smith River	2-Aug-2007	46.64061	-110.73511	NONE	F
10030103	Smith	North Fork Smith River	2-Aug-2007	46.57097	-110.85298	NONE	H
10030103	Smith	North Fork Smith River	2-Aug-2007	46.57704	-110.84342	NONE	H
10030103	Smith	Sheep Creek	30-Aug-2007	46.80755	-111.15774	NONE	F
10030103	Smith	Sheep Creek	13-Jul-2009	46.76788	-110.81139	NONE	H
10030103	Smith	Smith River	20-May-2004	46.58843	-111.05229	NONE	F
10030103	Smith	Smith River	2-Aug-2007	46.80435	-111.18284	NONE	F
10030103	Smith	Smith River	7-Aug-2007	46.80405	-111.18423	NONE	F
10030103	Smith	Smith River	7-Aug-2007	46.80629	-111.18471	NONE	F
10030103	Smith	Smith River	7-Aug-2007	46.79585	-111.17866	NONE	F
10030103	Smith	Smith River	7-Aug-2007	46.75526	-111.17185	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

10030103	Smith	Smith River	13-Aug-2007	46.75321	-111.16840	NONE	F
10030103	Smith	Smith River	13-Aug-2007	46.72399	-111.18249	NONE	F
10030103	Smith	Smith River	13-Aug-2007	46.67544	-111.14280	WEPE	D
10030103	Smith	Smith River	13-Aug-2007	46.58994	-111.05261	NONE	F
10030103	Smith	Smith River	30-Aug-2007	46.54840	-111.00908	NONE	F
10030103	Smith	Smith River	30-Aug-2007	46.87099	-111.27081	WEPE	D
10030103	Smith	Smith River	30-Aug-2007	47.38973	-111.44749	NONE	F
10030103	Smith	Smith River	30-Aug-2007	47.26159	-111.42065	NONE	F
10030103	Smith	Smith River	30-Aug-2007	46.67544	-111.14286	NONE	F
10030103	Smith	Smith River	30-Aug-2007	46.75528	-111.17185	NONE	F
10030103	Smith	Smith River	30-Aug-2007	46.80385	-111.18310	NONE	F
10030103	Smith	Smith River	30-Aug-2007	46.84687	-111.20994	NONE	F
10030103	Smith	Smith River	30-Aug-2007	46.85511	-111.24734	NONE	F
10030103	Smith	Smith River	30-Aug-2007	46.86925	-111.27231	NONE	F
10030103	Smith	Smith River	30-Jun-2008	47.09837	-111.28163	NONE	F
10030103	Smith	Smith River	30-Jun-2008	47.17446	-111.33173	NONE	F
10030103	Smith	Smith River	30-Jun-2008	47.18183	-111.33971	NONE	F
10030103	Smith	Smith River	30-Jun-2008	47.32500	-111.43287	NONE	F
10030103	Smith	Smith River	1-Jul-2008	47.39335	-111.44975	NONE	F
10030103	Smith	Smith River	1-Jul-2008	47.39335	-111.44975	NONE	F
10030103	Smith	Smith River	2-Jul-2008	47.39366	-111.44955	NONE	F
10030103	Smith	Smith River	2-Jul-2008	46.95896	-111.29864	WEPE	D
10030103	Smith	Smith River	20-Aug-2009	47.39424	-111.45018	FAMU	D
10030103	Smith	Smith River	20-Aug-2009	47.39424	-111.45018	WEPE	D
10030103	Smith	Smith River	20-Aug-2009	47.35515	-111.43721	NONE	F
10030103	Smith	Smith River	20-Aug-2009	47.26035	-111.42754	NONE	F
10030103	Smith	Smith River tributary	30-Aug-2007	46.58898	-111.05308	NONE	F
10030103	Smith	South Fork Smith River	2-Aug-2007	46.44657	-110.93047	NONE	F
10030103	Smith	South Fork Smith River	7-Aug-2007	46.40943	-110.89134	NONE	F
10030103	Smith	Spring Park Creek	2-Aug-2007	45.47636	-112.13833	NONE	F
10030103	Smith	Tenderfoot Creek	2-Aug-2007	46.91987	-110.86907	NONE	F
10030103	Smith	Thompson Gulch	21-Jul-2004	46.60957	-111.09198	NONE	F
10030103	Smith	Thompson Gulch	12-Aug-2007	46.51630	-111.21327	NONE	F
10030103	Smith	Trout Creek	1-Jul-2008	47.02774	-111.29121	NONE	F
10030103	Smith	Trout Creek	1-Jul-2008	47.05357	-111.27677	NONE	F
10030103	Smith	Willow Creek NF Smith River	17-Jul-2008	46.56711	-110.85694	NONE	F
10030104	Sun	Beaver Creek	1-May-1995	47.59559	-112.75332	NONE	F
10030104	Sun	Beaver Creek	20-Jul-2004	47.55574	-112.74722	NONE	F
10030104	Sun	Beaver Creek	20-Jul-2004	47.55574	-112.74722	NONE	F
10030104	Sun	Elk Creek	1-May-1995	47.50237	-112.36515	NONE	F
10030104	Sun	Elk Creek	7-Aug-2007	47.48527	-112.38748	NONE	F
10030104	Sun	Elk Creek	7-Aug-2007	47.51894	-112.30468	NONE	F
10030104	Sun	Ford Creek	27-Aug-2008	47.44166	-112.66714	NONE	F
10030104	Sun	Hogan's Slough	7-Aug-2007	47.50447	-112.35414	NONE	F
10030104	Sun	Simms Creek	1-May-1995	47.49853	-111.96067	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

10030104	Sun	South Fork Sun River	3-Aug-1994	47.48698	-112.91821	NONE	F
10030104	Sun	South Fork Sun River	2-Aug-2007	47.49160	-112.90900	NONE	F
10030104	Sun	South Fork Sun River	15-Jul-2008	47.49160	-112.90900	NONE	F
10030105	Belt	Belt Creek	30-Jul-2003	47.13531	-110.94297	NONE	F
10030105	Belt	Belt Creek	14-Jul-2009	47.21249	-110.93449	NONE	F
10030105	Belt	Belt Creek	14-Jul-2009	47.58215	-111.03019	NONE	F
10030105	Belt	Belt Creek	20-Aug-2009	47.58505	-111.03014	NONE	F
10030105	Belt	Belt Creek	20-Aug-2009	47.54275	-110.88522	NONE	F
10030105	Belt	Dry Fork Belt Creek	1-May-1995	47.04694	-110.62827	NONE	F
10030201	Two Medicine	South Fork Two Medicine Creek	25-Jul-2006	48.36150	-113.24960	NONE	F
10030203	Marias	Dugout Coulee	19-Aug-2009	48.25768	-110.90423	PYGR	D
10030203	Marias	Marias River	17-Aug-2009	47.92959	-110.50348	FAMU	C
10030203	Marias	Marias River	17-Aug-2009	48.48696	-112.22648	NONE	F
10030203	Marias	Marias River	17-Aug-2009	48.43197	-111.91750	NONE	F
10030203	Marias	Marias River	17-Aug-2009	48.38568	-111.71614	FAMU	B
10030203	Marias	Marias River	17-Aug-2009	48.38449	-111.71776	FAMU	C
10030203	Marias	Marias River	17-Aug-2009	48.38107	-111.78777	FAMU	C
10030203	Marias	Marias River	17-Aug-2009	48.42679	-111.89053	NONE	F
10030203	Marias	Marias River	18-Aug-2009	48.39287	-111.66396	FAMU	C
10030203	Marias	Marias River	18-Aug-2009	48.38664	-111.63892	FAMU	B
10030203	Marias	Marias River	18-Aug-2009	48.36764	-111.60393	FAMU	C
10030203	Marias	Marias River	18-Aug-2009	48.30691	-111.09172	NONE	F
10030203	Marias	Marias River	18-Aug-2009	48.29143	-111.04643	NONE	F
10030203	Marias	Marias River	18-Aug-2009	48.29201	-111.04896	FAMU	C
10030203	Marias	Marias River	18-Aug-2009	48.29201	-111.04896	PYGR	D
10030203	Marias	Marias River	18-Aug-2009	48.25939	-110.89213	FAMU	C
10030203	Marias	Marias River	18-Aug-2009	48.26624	-110.84363	FAMU	D
10030203	Marias	Marias River	18-Aug-2009	48.25777	-110.90318	FAMU	D
10030203	Marias	Marias River	18-Aug-2009	48.25777	-110.90318	PYGR	D
10030203	Marias	Marias River	19-Aug-2009	47.94194	-110.54719	FAMU	B
10030203	Marias	Marias River	19-Aug-2009	47.94194	-110.54719	PYGR	C
10030203	Marias	Marias River	19-Aug-2009	47.93233	-110.50923	FAMU	C
10030203	Marias	Marias River	19-Aug-2009	47.93233	-110.50923	BLSA	C
10030203	Marias	Marias River	19-Aug-2009	47.93233	-110.50923	PYGR	C
10030203	Marias	Marias River	19-Aug-2009	47.94669	-110.52729	FAMU	C
10030203	Marias	Marias River	19-Aug-2009	47.94417	-110.51966	FAMU	B
10030203	Marias	Marias River	19-Aug-2009	47.94417	-110.51966	BLSA	C
10030203	Marias	Marias River	19-Aug-2009	47.92957	-110.49021	NONE	F
10030203	Marias	Marias River	19-Aug-2009	47.82459	-110.64922	NONE	F
10030204	Willow	Willow Creek	18-Aug-2009	48.42889	-111.29898	NONE	F
10030205	Teton	Deep Creek	20-Aug-2009	47.76947	-112.20570	NONE	F
10030205	Teton	Deep Creek	20-Aug-2009	47.71280	-112.38923	NONE	F
10030205	Teton	Deep Creek	20-Aug-2009	47.71928	-112.59804	NONE	F
10030205	Teton	Teton River	4-Aug-1998	47.87677	-111.19690	NONE	F
10030205	Teton	Teton River	15-May-2009	47.86507	-111.67452	PYGR	C

Comprehensive Report on the Freshwater Mussels in Montana

10030205	Teton	Teton River	19-Aug-2009	47.93250	-110.51484	NONE	F
10030205	Teton	Waldron Creek	20-Aug-2009	47.92423	-112.80241	NONE	F
10040101	Bullwhacker - Dog	Beaver Creek	26-Aug-2009	48.55376	-109.76899	PYGR	D
10040101	Bullwhacker - Dog	Beaver Creek	26-Aug-2009	48.55894	-109.73640	PYGR	D
10040101	Bullwhacker - Dog	Big Sandy Creek	25-Aug-2009	48.55420	-109.76822	PYGR	D
10040101	Bullwhacker - Dog	Big Sandy Creek	25-Aug-2009	48.45256	-109.92069	PYGR	D
10040101	Bullwhacker - Dog	Big Sandy Creek	26-Aug-2009	48.32050	-110.05753	PYGR	D
10040101	Bullwhacker - Dog	Eagle Creek	14-Jul-2004	47.91580	-110.05580	FAMU	B
10040101	Bullwhacker - Dog	Eagle Creek	14-Jul-2004	47.91580	-110.05580	BLSA	B
10040101	Bullwhacker - Dog	Eagle Creek	14-Jul-2004	47.92361	-109.92848	NONE	F
10040101	Bullwhacker - Dog	Eagle Creek	14-Jul-2004	47.94434	-109.86244	NONE	F
10040101	Bullwhacker - Dog	Eagle Creek	3-Sep-2004	48.00401	-109.83084	NONE	F
10040101	Bullwhacker - Dog	Little Sandy Creek	13-Jul-2004	45.93158	-110.13623	FAMU	B
10040101	Bullwhacker - Dog	Little Sandy Creek	13-Jul-2004	45.93158	-110.13623	BLSA	C
10040101	Bullwhacker - Dog	Little Sandy Creek	13-Jul-2004	45.93158	-110.13623	PYGR	C
10040101	Bullwhacker - Dog	Little Sandy Creek	13-Jul-2004	48.03060	-110.13374	NONE	F
10040101	Bullwhacker - Dog	Missouri River	15-Jul-1994	47.70414	-109.75473	FAMU	B
10040101	Bullwhacker - Dog	Missouri River	15-Jul-1994	47.70414	-109.75473	BLSA	B
10040101	Bullwhacker - Dog	Missouri River	15-Aug-1994	48.02888	-110.13633	FAMU	B
10040101	Bullwhacker - Dog	Missouri River	15-Sep-1994	48.02888	-110.13633	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	11-Jun-1995	48.03286	-110.14708	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	11-Sep-1998	48.03286	-110.14708	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	12-Jul-2004	48.03286	-110.14708	PYGR	C
10040101	Bullwhacker - Dog	Missouri River	12-Jul-2004	47.73372	-109.67900	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	12-Jul-2004	47.73372	-109.67900	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	12-Jul-2004	47.92963	-110.06351	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	12-Jul-2004	47.92963	-110.06351	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	12-Jul-2004	47.76273	-109.89425	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	12-Jul-2004	47.76273	-109.89425	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	12-Jul-2004	47.71517	-109.83670	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	12-Jul-2004	47.71517	-109.83670	FAMU	D
10040101	Bullwhacker - Dog	Missouri River	12-Jul-2004	47.78313	-109.95358	FAMU	A
10040101	Bullwhacker - Dog	Missouri River	13-Jul-2004	47.78313	-109.95358	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	13-Jul-2004	47.78313	-109.95358	PYGR	C
10040101	Bullwhacker - Dog	Missouri River	14-Jul-2004	47.81932	-110.05019	FAMU	B
10040101	Bullwhacker - Dog	Missouri River	14-Jul-2004	47.81932	-110.05019	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	14-Jul-2004	47.73767	-109.87557	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	14-Jul-2004	47.73767	-109.87557	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	48.03286	-110.14708	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	48.03286	-110.14708	PYGR	C
10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	48.03286	-110.14708	FAMU	D
10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	48.03129	-110.13382	BLSA	B
10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	48.03129	-110.13382	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	47.91539	-110.05818	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	47.91539	-110.05818	BLSA	C

Comprehensive Report on the Freshwater Mussels in Montana

10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	47.76206	-109.91104	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	47.76206	-109.91104	FAMU	D
10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	47.94737	-110.07987	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	47.94737	-110.07987	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	46.33610	-111.52870	FAMU	D
10040101	Bullwhacker - Dog	Missouri River	15-Jul-2004	48.03320	-110.23200	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	16-Jul-2004	47.82140	-110.66110	NONE	F
10040101	Bullwhacker - Dog	Missouri River	16-Jul-2004	47.82140	-110.66110	NONE	F
10040101	Bullwhacker - Dog	Missouri River	16-Jul-2004	48.03320	-110.22410	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	16-Jul-2004	48.03320	-110.22410	BLSA	C
10040101	Bullwhacker - Dog	Missouri River	16-Jul-2004	48.02900	-103.54570	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	16-Jul-2004	48.10860	-103.71440	FAMU	D
10040101	Bullwhacker - Dog	Missouri River	8-Aug-2004	47.74930	-108.92920	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	12-Aug-2004	47.74930	-108.92920	PYGR	C
10040101	Bullwhacker - Dog	Missouri River	23-Jul-2005	47.51039	-107.93101	FAMU	D
10040101	Bullwhacker - Dog	Missouri River	25-Aug-2006	47.95060	-110.37440	PYGR	C
10040101	Bullwhacker - Dog	Missouri River	23-Jul-2009	48.03109	-110.23608	BLSA	B
10040101	Bullwhacker - Dog	Missouri River	23-Jul-2009	48.03109	-110.23608	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	23-Jul-2009	47.58489	-111.06042	FAMU	D
10040101	Bullwhacker - Dog	Missouri River	19-Aug-2009	47.19968	-111.77515	NONE	F
10040101	Bullwhacker - Dog	Missouri River	19-Aug-2009	47.53103	-111.23493	NONE	F
10040101	Bullwhacker - Dog	Missouri River	19-Aug-2009	47.52901	-111.23899	FAMU	C
10040101	Bullwhacker - Dog	Missouri River	19-Aug-2009	47.82395	-110.65081	NONE	F
10040101	Bullwhacker - Dog	Missouri River	20-Aug-2009	47.82207	-110.66054	FAMU	D
10040101	Bullwhacker - Dog	Missouri River	20-Aug-2009	47.82207	-110.66054	BLSA	D
10040101	Bullwhacker - Dog	Missouri River	20-Aug-2009	47.76065	-110.89490	NONE	F
10040101	Bullwhacker - Dog	Missouri River	20-Aug-2009	47.27053	-111.69506	WEPE	D
10040101	Bullwhacker - Dog	Missouri River	25-Aug-2009	46.26529	-111.48914	NONE	F
10040101	Bullwhacker - Dog	Missouri River	25-Aug-2009	45.93908	-111.44527	NONE	F
10040101	Bullwhacker - Dog	Missouri River	26-Aug-2009	46.17369	-111.44527	NONE	F
10040102	Arrow	Arrow Creek	16-Jul-2004	47.71516	-109.83360	FAMU	B
10040102	Arrow	Arrow Creek	16-Jul-2004	47.71516	-109.83360	BLSA	B
10040103	Judith	Warm Springs Creek	8-Oct-2008	47.20011	-109.36424	NONE	F
10040104	Fort Peck Reservoir	Bull Creek	28-Jun-2006	47.78119	-108.93219	NONE	F
10040104	Fort Peck Reservoir	Bull Creek	3-Jul-2006	47.78259	-108.93918	NONE	F
10040104	Fort Peck Reservoir	Fargo Coulee	28-Jun-2006	47.57830	-108.81760	NONE	F
10040104	Fort Peck Reservoir	Porcupine Creek	21-Jul-2000	46.87538	-111.69213	NONE	F
10040104	Fort Peck Reservoir	South Fork Two Calf Creek	28-Jun-2006	47.63920	-108.88790	NONE	F
10040104	Fort Peck Reservoir	Two Calf Creek	28-Jun-2006	47.64058	-108.86688	NONE	F
10040104	Fort Peck Reservoir	Woodhawk Creek	3-Jul-2006	47.74097	-108.95696	NONE	F
10040201	Musselshell	Musselshell River	30-Apr-1995	46.44779	-110.17830	NONE	F
10040201	Musselshell	Musselshell River	25-Sep-1997	46.39018	-109.65420	NONE	F
10040201	Musselshell	Musselshell River	25-Jul-2007	46.31519	-109.18520	NONE	F
10040201	Musselshell	Musselshell River	25-Jul-2007	46.30876	-109.19017	NONE	F
10040201	Musselshell	Musselshell River	25-Jul-2007	46.27896	-108.83310	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

10040201	Musselshell	Musselshell River	25-Jul-2007	46.44634	-108.51272	FAMU	B
10040201	Musselshell	Musselshell River	25-Jul-2007	46.42907	-109.84167	NONE	F
10040201	Musselshell	Musselshell River	15-May-2008	46.29875	-108.78150	NONE	F
10040201	Musselshell	Musselshell River	15-May-2008	46.29398	-109.25800	NONE	F
10040201	Musselshell	Musselshell River	16-Jul-2008	46.44650	-108.51080	FAMU	C
10040201	Musselshell	Musselshell River	16-Jul-2008	46.31654	-109.41853	NONE	F
10040201	Musselshell	Musselshell River	17-Jul-2008	46.31799	-109.42023	NONE	F
10040201	Musselshell	North Fork Musselshell River	17-Jul-2008	46.49318	-110.31645	NONE	F
10040201	Musselshell	North Fork Musselshell River	17-Jul-2008	46.49611	-110.33483	NONE	F
10040201	Musselshell	North Fork Musselshell River	17-Jul-2008	46.50640	-110.35620	NONE	F
10040202	Middle Musselshell	Musselshell River	25-Jul-2007	46.43781	-108.54028	NONE	F
10040202	Middle Musselshell	Musselshell River	23-Jul-2009	46.42982	-110.07250	NONE	F
10040202	Middle Musselshell	Musselshell River	23-Jul-2009	46.46745	-110.22947	NONE	F
10040202	Middle Musselshell	Musselshell River	23-Jul-2009	46.46252	-110.31819	NONE	F
10040202	Middle Musselshell	Willow Creek	22-Jul-2009	46.57608	-108.67858	NONE	F
10040205	Lower Musselshell	Crooked Creek	27-Jun-2006	47.44535	-108.36953	NONE	F
10040205	Lower Musselshell	Crooked Creek	27-Jun-2006	47.46611	-108.26443	NONE	F
10040205	Lower Musselshell	Musselshell River	1-Oct-1992	46.61989	-107.82091	FAMU	B
10040205	Lower Musselshell	Musselshell River	1-Oct-1992	46.61989	-107.82091	BLSA	C
10040205	Lower Musselshell	Musselshell River	28-Jul-1998	46.62150	-107.82190	FAMU	C
10040205	Lower Musselshell	Musselshell River	28-Jul-1998	46.62150	-107.82190	BLSA	C
10040205	Lower Musselshell	Musselshell River	26-Aug-2001	46.62150	-107.82190	FAMU	C
10040205	Lower Musselshell	Musselshell River	26-Aug-2001	46.62150	-107.82190	PYGR	C
10040205	Lower Musselshell	Musselshell River	26-Jul-2008	46.62150	-107.82190	FAMU	C
10040205	Lower Musselshell	Musselshell River	26-Jul-2008	46.62150	-107.82190	PYGR	C
10040205	Lower Musselshell	Musselshell River	22-Jul-2009	46.62150	-107.82190	NONE	F
10050004	Milk	Dodson Creek	20-Jul-2004	48.37690	-108.24600	FAMU	B
10050004	Milk	Dodson Creek	20-Jul-2004	48.37690	-108.24600	BLSA	B
10050004	Milk	Dodson Creek	20-Jul-2004	48.37690	-108.24600	PYGR	C
10050004	Milk	Little Cottonwood Creek	17-Sep-2007	48.62011	-107.83021	NONE	F
10050004	Milk	Milk River	16-Aug-1994	48.58420	-107.71870	FAMU	C
10050004	Milk	Milk River	15-Aug-1996	48.58420	-107.71870	BLSA	C
10050004	Milk	Milk River	19-May-1997	48.58420	-107.71870	PYGR	C
10050004	Milk	Milk River	19-May-1997	48.50797	-107.21832	FAMU	B
10050004	Milk	Milk River	1-Jul-1997	48.50797	-107.21832	WHHE	B
10050004	Milk	Milk River	26-Apr-2002	48.39886	-107.05201	FAMU	B
10050004	Milk	Milk River	21-Jul-2004	48.39886	-107.05201	WHHE	B
10050004	Milk	Milk River	21-Jul-2004	48.39886	-107.05201	BLSA	C
10050004	Milk	Milk River	21-Jul-2004	48.37750	-108.24640	FAMU	C
10050004	Milk	Milk River	21-Jul-2004	48.37750	-108.24640	BLSA	C
10050004	Milk	Milk River	21-Jul-2004	48.17809	-106.62119	FAMU	C
10050004	Milk	Milk River	21-Jun-2005	48.17809	-106.62119	WHHE	C
10050004	Milk	Milk River	21-Jun-2005	48.17809	-106.62119	BLSA	C
10050004	Milk	Milk River	21-Jun-2005	48.55320	-107.57075	FAMU	C

Comprehensive Report on the Freshwater Mussels in Montana

10050004	Milk	Milk River	21-Jun-2005	48.55320	-107.57075	BLSA	C
10050004	Milk	Milk River	21-Jun-2005	48.07940	-106.26640	FAMU	C
10050004	Milk	Milk River	27-Jun-2006	48.07940	-106.26640	PYGR	C
10050004	Milk	Milk River	27-Jun-2006	48.07940	-106.26640	PYGR	C
10050004	Milk	Milk River	27-Jun-2006	48.35940	-106.90510	PYGR	C
10050004	Milk	Milk River	28-Jul-2006	48.50797	-107.21832	PYGR	C
10050004	Milk	Milk River	28-Jul-2006	48.50797	-107.21832	PYGR	C
10050004	Milk	Milk River	28-Jul-2006	48.97533	-110.42364	NONE	F
10050004	Milk	Milk River	24-Aug-2009	48.83806	-110.16944	NONE	F
10050004	Milk	Milk River	24-Aug-2009	48.59946	-109.93837	NONE	F
10050004	Milk	Milk River	24-Aug-2009	48.59878	-109.93696	NONE	F
10050004	Milk	Milk River	24-Aug-2009	48.57521	-109.75504	NONE	F
10050004	Milk	Milk River	25-Aug-2009	48.56702	-109.46282	NONE	F
10050004	Milk	Milk River	25-Aug-2009	48.57965	-109.25673	NONE	F
10050004	Milk	Milk River	25-Aug-2009	48.37750	-108.24640	BLSA	C
10050004	Milk	Milk River	25-Aug-2009	48.37750	-108.24640	FAMU	D
10050004	Milk	Milk River	25-Aug-2009	48.52413	-108.85504	NONE	F
10050004	Milk	Milk River	25-Aug-2009	48.99064	-110.51538	NONE	F
10050004	Milk	Milk River	25-Aug-2009	48.97231	-110.41674	NONE	F
10050004	Milk	Milk River	25-Aug-2009	48.79949	-110.13382	NONE	F
10050004	Milk	Milk River	25-Aug-2009	48.06260	-106.31480	WHHE	C
10050004	Milk	Milk River	25-Aug-2009	48.79949	-110.13454	NONE	F
10050004	Milk	Milk River trib	24-Aug-2009	48.97294	-110.42139	NONE	F
10050004	Milk	Savoy Creek	23-Jun-2004	48.50670	-108.53271	NONE	F
10050006	Sage	Little Sage Creek	18-Sep-2007	48.77925	-110.77267	NONE	F
10050006	Sage	Sage Creek	24-Aug-2009	48.56630	-110.30215	NONE	F
10050007	Milk	Lodge Creek	25-Aug-2009	48.59418	-109.21559	PYGR	D
10050008	Battle	Battle Creek	2-Jul-2004	48.63170	-109.20860	PYGR	C
10050008	Milk	Battle Creek	2-Jul-2004	48.63170	-109.20860	FAMU	B
10050008	Battle	Battle Creek	2-Jul-2004	48.93638	-109.43122	PYGR	C
10050008	Battle	Battle Creek	2-Jul-2004	48.93638	-109.43122	FAMU	D
10050008	Battle	Battle Creek	2-Jul-2004	48.88388	-109.39550	FAMU	C
10050008	Battle	Battle Creek	2-Jul-2004	48.88388	-109.39550	PYGR	D
10050008	Battle	Battle Creek	2-Jul-2004	48.78739	-109.30017	FAMU	C
10050008	Battle	Battle Creek	2-Jul-2004	48.78739	-109.30017	PYGR	C
10050008	Battle	Battle Creek	25-Jul-2004	48.63170	-109.20860	FAMU	C
10050008	Battle	Battle Creek	25-Jul-2004	48.63170	-109.20860	PYGR	C
10050008	Battle	Battle Creek	25-Aug-2009	48.78739	-109.30017	FAMU	D
10050008	Battle	Battle Creek	25-Aug-2009	48.59382	-109.15541	FAMU	C
10050008	Battle	Battle Creek	25-Aug-2009	48.59382	-109.15541	PYGR	D
10050008	Battle	Battle Creek	25-Aug-2009	48.64918	-109.23155	FAMU	B
10050008	Battle	Battle Creek	25-Aug-2009	48.64918	-109.23155	PYGR	B
10050008	Battle	Battle Creek	25-Aug-2009	48.79369	-109.30642	PYGR	D
10050008	Battle	Battle Creek	26-Aug-2009	48.88368	-109.39531	PYGR	D
10050008	Battle	Battle Creek	26-Aug-2009	48.88742	-109.39785	FAMU	C

Comprehensive Report on the Freshwater Mussels in Montana

10050008	Battle	Battle Creek	26-Aug-2009	48.88742	-109.39785	PYGR	C
10050008	Battle	Hanson Coulee	23-Jun-2004	48.72620	-109.28780	NONE	F
10050008	Battle	Link Coulee	2-Jul-2004	48.79860	-109.34104	NONE	F
10050009	Peoples	People's Creek	20-May-1995	48.40780	-108.38730	PYGR	D
10050010	Cottonwood	Black Coulee	8-Jun-2004	48.74526	-108.21410	NONE	F
10050010	Cottonwood	Black Coulee	23-Jun-2004	48.74561	-108.21142	NONE	F
10050010	Cottonwood	Black Coulee	23-Jun-2004	48.74170	-108.18530	NONE	F
10050010	Cottonwood	Buckley Creek	8-Jun-2004	48.87841	-108.41762	NONE	F
10050010	Cottonwood	Coberg Coulee	22-Jun-2004	48.74122	-108.21877	NONE	F
10050010	Cottonwood	Coberg Coulee	22-Jun-2004	48.69130	-108.25560	NONE	F
10050010	Cottonwood	Cottonwood Creek	22-Jun-2004	48.74130	-108.18110	NONE	F
10050010	Cottonwood	Cottonwood Creek	22-Jun-2004	48.69557	-108.10194	NONE	F
10050010	Cottonwood	Cottonwood Creek	22-Jun-2005	48.74135	-108.18218	NONE	F
10050010	Cottonwood	Cowen Coulee	22-Jun-2004	48.87265	-108.25798	NONE	F
10050010	Cottonwood	Dry Coulee	23-Jun-2004	48.73180	-108.18610	NONE	F
10050010	Cottonwood	Lemere Coulee	23-Jun-2004	48.71589	-108.17088	NONE	F
10050010	Cottonwood	Lemere Coulee mouth to Cottonwood	23-Jun-2004	48.71940	-108.16740	NONE	F
10050010	Cottonwood	Murray Coulee	21-Jun-2004	48.89472	-108.57329	NONE	F
10050011	Whitewater	East Fork Whitewater Creek	22-Jul-2004	48.78773	-107.61360	NONE	F
10050011	Whitewater	Police Creek	22-Jul-2004	48.67011	-105.63192	NONE	F
10050011	Whitewater	Whitewater Creek	15-Jul-2004	48.95661	-107.85937	PYGR	C
10050011	Whitewater	Whitewater Creek	21-Jul-2004	48.60006	-107.51947	PYGR	D
10050013	Frenchman	Anderson Coulee	22-Jul-2004	48.58610	-107.24640	NONE	F
10050013	Frenchman	Frenchman Creek	15-Jul-1996	48.85226	-107.25938	NONE	F
10050013	Frenchman	Frenchman Creek	11-Jun-1999	48.85789	-107.25507	FAMU	C
10050013	Frenchman	Frenchman Creek	21-Jul-2004	48.85789	-107.25507	PYGR	C
10050013	Frenchman	Frenchman Creek	21-Jul-2004	48.75525	-107.21223	FAMU	C
10050013	Frenchman	Frenchman Creek	21-Jul-2004	48.75525	-107.21223	PYGR	C
10050013	Frenchman	Frenchman Creek	22-Jul-2004	48.59904	-107.25464	FAMU	C
10050013	Frenchman	Frenchman Creek	22-Jul-2004	48.59904	-107.25464	PYGR	C
10050013	Frenchman	Frenchman Creek	22-Jul-2004	48.78350	-107.23740	PYGR	C
10050013	Frenchman	Frenchman Creek	22-Jul-2004	48.78350	-107.23740	PYGR	D
10050013	Frenchman	Peck Coulee	21-Jul-2004	48.85690	-107.25670	NONE	F
10050013	Frenchman	Peck Coulee	21-Jul-2004	48.90550	-107.25500	NONE	F
10050013	Frenchman	Poplar Coulee	20-Jul-2004	48.66610	-107.26170	NONE	F
10050013	Frenchman	Prestige Coulee	22-Jul-2004	48.61390	-107.28350	NONE	F
10050013	Frenchman	School Section Coulee	21-Jul-2004	48.82427	-107.22771	NONE	F
10050013	Frenchman	Shed Coulee	21-Jul-2004	48.76880	-107.22450	NONE	F
10050013	Frenchman	Woody Coulee	21-Jul-2004	48.92080	-107.27290	NONE	F
10050014	Beaver in Milk River	Big Warm Creek	30-Jul-2005	48.07640	-108.27830	PYGR	C
10050014	Beaver in Milk River	Big Warm Creek	21-Jun-2007	48.03803	-108.32982	PYGR	B
10050014	Beaver in Milk River	First Creek	15-Jul-2004	48.42526	-107.35988	NONE	F
10050014	Beaver in Milk River	Little Warm Creek	30-Jul-2005	47.98961	-108.31467	PYGR	C
10050014	Beaver in Milk River	Little Warm Creek	21-Jun-2007	47.98535	-108.32277	PYGR	C

Comprehensive Report on the Freshwater Mussels in Montana

10050015	Rock Creek	Cherry Creek	22-Jul-2004	48.34974	-106.63325	NONE	F
10050015	Rock Creek	Rock Creek	5-Jul-2006	48.94098	-106.85495	PYGR	C
10050015	Rock Creek	Rock Creek	5-Jul-2006	48.85463	-106.92180	PYGR	C
10050015	Rock Creek	Rock Creek	31-Jul-2007	48.85463	-106.92180	NONE	F
10050015	Rock Creek	Snake Creek	21-Jul-2004	48.74413	-107.08369	NONE	F
10050015	Rock Creek	Willow Creek	30-Jul-2005	48.57350	-106.97406	FAMU	B
10050015	Rock Creek	Willow Creek	30-Jul-2005	48.57350	-106.97406	PYGR	C
10060001	Porcupine	East Fork Little Porcupine Creek	4-Oct-2008	48.44991	-106.06615	NONE	F
10060001	Porcupine	Little Porcupine Creek	28-Aug-2003	48.14512	-106.04875	NONE	F
10060003	Poplar	Butte Creek	21-Jul-2004	48.82810	-105.60120	NONE	F
10060003	Poplar	Cabarett Coulee	18-Sep-2007	48.65575	-105.48554	NONE	F
10060003	Poplar	East Fork Poplar River	11-May-1999	48.82780	-105.45140	PYGR	C
10060003	Poplar	Poplar River	16-Aug-1994	48.12300	-105.19020	FAMU	C
10060003	Poplar	Poplar River	11-May-1999	48.81930	-105.47440	PYGR	D
10060003	Poplar	Poplar River	15-Sep-2003	48.78367	-105.44943	PYGR	C
10060004	West Fork Poplar	Butte Creek trib	21-Jul-2004	48.85811	-105.86930	NONE	F
10060005	Charlie - Little Muddy	Charlie Creek	13-Aug-2007	48.00950	-104.73330	NONE	F
10060005	Charlie - Little Muddy	Charlie Creek	13-Aug-2007	48.11374	-104.86108	NONE	F
10060005	Charlie - Little Muddy	East Charlie Creek	21-Jul-2004	47.96711	-104.69404	NONE	F
10060005	Charlie - Little Muddy	East Shotgun Creek	20-Sep-2007	48.21542	-104.27939	PYGR	C
10060005	Charlie - Little Muddy	West Shotgun Creek	20-Sep-2007	48.24817	-104.31388	NONE	F
10060006	Big Muddy	Ator Creek	15-Aug-1996	48.74164	-104.46795	NONE	F
10060006	Big Muddy	Ator Creek	21-Jun-2007	48.73550	-104.48100	PYGR	C
10060006	Big Muddy	Beaver Creek	9-Oct-2008	48.96895	-104.97828	NONE	F
10060006	Big Muddy	Big Muddy Creek	16-Aug-1994	48.78190	-104.65654	NONE	F
10060006	Big Muddy	Big Muddy Creek	3-Oct-1998	48.78190	-104.65654	PYGR	D
10060006	Big Muddy	Big Muddy Creek	3-Oct-1998	48.33120	-104.59960	FAMU	C
10060006	Big Muddy	Big Muddy Creek	15-Aug-2003	48.34170	-104.59010	FAMU	C
10060006	Big Muddy	Big Muddy Creek	20-Jun-2007	48.34170	-104.59010	PYGR	C
10060006	Big Muddy	Big Muddy Creek	17-Sep-2007	48.70880	-104.47580	PYGR	C
10060006	Big Muddy	Big Muddy Creek	19-Sep-2007	48.14550	-104.08960	PYGR	D
10060006	Big Muddy	Big Muddy Creek	19-Sep-2007	48.70880	-104.47580	PYGR	D
10060006	Big Muddy	Lake Creek	18-Sep-2007	48.50533	-104.30171	NONE	F
10060006	Big Muddy	McCoy Creek	20-Jun-2007	48.83783	-104.59313	PYGR	C
10060006	Big Muddy	McCoy Creek	18-Sep-2007	48.83783	-104.59313	PYGR	C
10060006	Big Muddy	Plentywood Creek	16-Jun-2004	48.86940	-104.76309	PYGR	C
10060006	Big Muddy	Plentywood Creek	20-Jun-2007	48.82483	-104.68535	PYGR	C
10060006	Big Muddy	Plentywood Creek	20-Jun-2007	48.78391	-104.65979	NONE	F
10060006	Big Muddy	Sand Creek	18-Sep-2007	48.38921	-104.20747	NONE	F
10060006	Big Muddy	South Fork Whitetail Creek	21-Jun-2007	48.86905	-105.16899	NONE	F
10060006	Big Muddy	Whitetail Creek	15-Aug-1996	48.89150	-105.16380	NONE	F
10060006	Big Muddy	Whitetail Creek	21-Jun-2007	48.90675	-104.95276	PYGR	D
10060006	Big Muddy	Whitetail Creek	18-Sep-2007	48.90675	-104.95276	NONE	F
10060006	Big Muddy	Whitetail Creek	18-Sep-2007	48.88691	-105.10469	PYGR	C

Comprehensive Report on the Freshwater Mussels in Montana

10060006	Big Muddy	Whitetail Creek	9-Oct-2008	48.90630	-104.95150	PYGR	C
10060006	Big Muddy	Whitetail Creek Reservoir	15-Aug-1996	48.88980	-105.15930	PYGR	C
10060006	Big Muddy	Wolf Creek	13-Aug-2007	48.58468	-104.75366	NONE	F
10070002	Upper Yellowstone	Boulder River	27-Jun-2006	45.83389	-109.93806	NONE	F
10070003	Upper Yellowstone	Shields River	27-Jun-2006	45.95583	-110.63361	NONE	F
10070004	Upper Yellowstone	Yellowstone River	17-Sep-2007	45.53850	-110.58100	NONE	F
10070004	Upper Yellowstone	Yellowstone River	23-Jul-2009	45.68131	-108.66644	NONE	F
10070004	Upper Yellowstone	Yellowstone River	23-Jul-2009	45.65250	-110.55890	NONE	F
10070006	Clarks Fork Yellowstone	Yellowstone River	21-Oct-1975	45.62140	-109.23720	FAMU	B
10070007	Upper Yellowstone	Yellowstone River	23-Jul-2009	45.68960	-108.64490	NONE	F
10070007	Upper Yellowstone	Yellowstone River	23-Jul-2009	45.80000	-108.46670	NONE	F
10070007	Upper Yellowstone	Yellowstone River	23-Jul-2009	45.90360	-108.31990	NONE	F
10070008	Pryor	Pryor Creek	4-Jul-2003	45.42584	-108.55526	NONE	F
10080010	Bighorn Lake	Bighorn River	5-Aug-1992	44.75899	-108.18087	FAMU	D
10080010	Bighorn Lake	Crooked Creek	3-Sep-2008	45.06102	-108.38927	NONE	F
10080015	Bighorn River	Beauvais Creek	3-Jul-2003	45.47694	-108.00810	NONE	F
10080015	Bighorn River	Bighorn River	23-Jul-1998	46.14570	-107.46480	FAMU	C
10080015	Bighorn River	Bighorn River	11-Sep-2009	46.14752	-107.46650	FAMU	B
10090101	Upper Tongue River	Tongue River	11-Aug-1996	45.02260	-106.81140	PYGR	C
10090101	Upper Tongue River	Tongue River	4-Jul-2003	44.99661	-106.88003	NONE	F
10090101	Upper Tongue River	Tongue River	4-Jul-2003	45.41154	-106.45758	FAMU	C
10090101	Upper Tongue River	Tongue River	13-May-2008	45.36678	-106.49116	FAMU	C
10090101	Upper Tongue River	Tongue River	13-May-2008	45.03030	-106.81360	FAMU	C
10090101	Upper Tongue River	Tongue River	21-Jul-2009	45.27044	-106.62432	NONE	F
10090101	Upper Tongue River	Tongue River	21-Jul-2009	45.41117	-106.45743	FAMU	C
10090102	Lower Tongue River	Little Pumpkin Creek	21-Jul-2009	45.74459	-105.84949	NONE	F
10090102	Lower Tongue River	Otter Creek	20-May-2004	45.40361	-106.14226	NONE	F
10090102	Lower Tongue River	Otter Creek	21-Jul-2009	45.59919	-106.27085	NONE	F
10090102	Lower Tongue River	Tongue River	19-Jul-1990	46.40130	-105.85750	FAMU	C
10090102	Lower Tongue River	Tongue River	20-Jul-1994	46.40130	-105.85750	MAPL	C
10090102	Lower Tongue River	Tongue River	17-Aug-1994	46.24800	-105.75170	FAMU	C
10090102	Lower Tongue River	Tongue River	12-Aug-1996	46.24800	-105.75170	MAPL	C
10090102	Lower Tongue River	Tongue River	12-Aug-1996	46.24800	-105.75170	FAMU	C
10090102	Lower Tongue River	Tongue River	4-Aug-2001	46.24800	-105.75170	MAPL	C
10090102	Lower Tongue River	Tongue River	4-Aug-2001	46.24800	-105.75170	FAMU	C
10090102	Lower Tongue River	Tongue River	25-Aug-2001	46.24800	-105.75170	MAPL	C
10090102	Lower Tongue River	Tongue River	25-Aug-2001	46.37400	-105.83350	FAMU	B
10090102	Lower Tongue River	Tongue River	25-Aug-2001	45.84000	-106.22050	FAMU	C
10090102	Lower Tongue River	Tongue River	25-Aug-2001	45.97880	-106.05650	FAMU	C
10090102	Lower Tongue River	Tongue River	15-Sep-2001	46.40130	-105.85750	FAMU	D
10090102	Lower Tongue River	Tongue River	15-Sep-2001	46.40130	-105.85750	FAMU	C
10090102	Lower Tongue River	Tongue River	10-Sep-2009	46.40311	-105.85847	MAPL	B
10090102	Lower Tongue River	Tongue River	10-Sep-2009	46.40311	-105.85847	FAMU	C
10090102	Lower Tongue River	Tongue River	10-Sep-2009	46.40311	-105.85847	PYGR	D
10090102	Lower Tongue River	Tooley Creek	11-Jul-2005	45.21646	-106.26691	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

10090207	Powder River	Powder River	25-Aug-2001	45.53583	-105.33667	NONE	F
10090207	Powder River	Powder River	14-Jul-2002	46.43200	-105.31381	NONE	F
10090207	Powder River	Powder River	11-Jul-2005	45.05778	-105.87750	NONE	F
10090207	Powder River	Powder River	11-Jul-2005	45.01280	-105.90289	NONE	F
10090207	Powder River	Powder River	11-Jul-2005	45.03771	-105.88085	NONE	F
10090207	Powder River	Powder River	11-Jul-2005	45.10712	-105.84206	NONE	F
10090207	Powder River	Powder River	11-Jul-2005	45.18940	-105.75199	NONE	F
10090207	Powder River	Powder River	11-Jul-2005	45.34667	-105.53329	NONE	F
10090207	Powder River	Powder River	11-Jul-2005	45.22560	-105.69058	NONE	F
10090207	Powder River	Powder River	11-Jul-2005	45.04160	-105.88390	FAMU	C
10090207	Powder River	Powder River	11-Jul-2005	46.42530	-105.30640	NONE	F
10090207	Powder River	Powder River	11-Jul-2005	45.05563	-105.87547	NONE	F
10090209	Lower Powder	Powder River	9-Sep-2009	46.74201	-105.43189	NONE	F
10100001	LowerYellowstone Sunday	Little Porcupine Creek	22-Jul-2009	46.30393	-106.57470	PYGR	B
10100001	LowerYellowstone Sunday	Little Porcupine Creek	22-Jul-2009	46.30393	-106.57470	FAMU	D
10100001	LowerYellowstone Sunday	Yellowstone River	21-Aug-1975	46.26450	-106.69510	FAMU	C
10100001	LowerYellowstone Sunday	Yellowstone River	21-Aug-1975	46.15020	-107.48080	FAMU	C
10100001	LowerYellowstone Sunday	Yellowstone River	21-Nov-1975	46.42170	-105.86060	FAMU	B
10100001	LowerYellowstone Sunday	Yellowstone River	28-Apr-1992	46.80459	-105.29486	FAMU	C
10100001	LowerYellowstone Sunday	Yellowstone River	5-Aug-1992	46.28921	-106.91063	FAMU	D
10100001	LowerYellowstone Sunday	Yellowstone River	23-Apr-2002	46.33210	-106.08240	FAMU	C
10100001	LowerYellowstone Sunday	Yellowstone River	23-Aug-2005	46.31362	-107.23741	FAMU	C
10100001	LowerYellowstone Sunday	Yellowstone River	28-Dec-2007	46.31362	-107.23741	MAPL	D
10100001	LowerYellowstone Sunday	Yellowstone River	28-Dec-2007	46.31362	-107.23741	FAMU	C
10100001	LowerYellowstone Sunday	Yellowstone River	22-Jul-2009	46.27550	-106.67820	FAMU	D
10100001	LowerYellowstone Sunday	Yellowstone River	23-Jul-2009	46.27550	-106.67820	NONE	F
10100001	LowerYellowstone Sunday	Yellowstone River	23-Jul-2009	46.27550	-106.46454	FAMU	D
10100001	LowerYellowstone Sunday	Yellowstone River	8-Sep-2009	46.14151	-107.54722	NONE	F
10100001	LowerYellowstone Sunday	Yellowstone River	8-Sep-2009	46.26610	-106.69000	FAMU	D
10100001	LowerYellowstone Sunday	Yellowstone River	8-Sep-2009	46.27483	-106.67767	NONE	F
10100001	LowerYellowstone Sunday	Yellowstone River	8-Sep-2009	46.27550	-106.67820	FAMU	D
10100001	LowerYellowstone Sunday	Yellowstone River	8-Sep-2009	46.27550	-106.46454	FAMU	D
10100001	LowerYellowstone Sunday	Yellowstone River	8-Sep-2009	46.42143	-105.85693	FAMU	D
10100001	LowerYellowstone Sunday	Yellowstone River	8-Sep-2009	46.80408	-105.29452	NONE	F
10100001	LowerYellowstone Sunday	Yellowstone River	8-Sep-2009	46.14151	-107.54722	NONE	F
10100001	LowerYellowstone Sunday	Yellowstone River	9-Sep-2009	46.39851	-105.89412	FAMU	C
10100001	LowerYellowstone Sunday	Yellowstone River	11-Sep-2009	46.27699	-106.48205	FAMU	D
10100001	LowerYellowstone Sunday	Yellowstone River	11-Sep-2009	46.25499	-107.34271	FAMU	D
10100001	LowerYellowstone Sunday	Yellowstone River	11-Sep-2009	46.07504	-107.71953	NONE	F
10100002	Big Porcupine	Big Porcupine Creek	22-Jul-2009	46.36860	-106.90967	NONE	F
10100003	Rosebud Creek	Rosebud Creek	22-Jul-2009	46.26958	-106.47753	NONE	F
10100003	Rosebud Creek	Rosebud Creek	22-Jul-2009	46.26197	-106.47778	NONE	F
10100004	LowerYellowstone	Cottonwood Creek	1-Jun-2005	47.27664	-104.38071	NONE	F
10100004	LowerYellowstone	Glendive Creek	10-Sep-2009	47.10154	-104.63605	NONE	F
10100004	LowerYellowstone	Glendive Creek	12-Sep-2009	47.12162	-104.66456	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

10100004	LowerYellowstone	Yellowstone River	21-Aug-1975	47.10500	-104.71981	FAMU	C
10100004	LowerYellowstone	Yellowstone River	21-Aug-1975	47.67169	-104.15847	FAMU	B
10100004	LowerYellowstone	Yellowstone River	8-Oct-1991	46.85570	-105.11450	FAMU	C
10100004	LowerYellowstone	Yellowstone River	24-Apr-2002	47.28070	-104.52400	FAMU	D
10100004	LowerYellowstone	Yellowstone River	25-Apr-2002	47.28070	-104.52400	FAMU	D
10100004	LowerYellowstone	Yellowstone River	25-Apr-2002	47.75790	-104.05540	FAMU	D
10100004	LowerYellowstone	Yellowstone River	7-Aug-2002	47.57720	-104.22030	FAMU	C
10100004	LowerYellowstone	Yellowstone River	6-Sep-2004	47.40420	-104.34727	FAMU	C
10100004	LowerYellowstone	Yellowstone River	9-Sep-2009	46.83625	-105.14778	FAMU	D
10100004	LowerYellowstone	Yellowstone River	9-Sep-2009	47.28077	-104.52584	FAMU	D
10100004	LowerYellowstone	Yellowstone River	9-Sep-2009	47.28125	-104.53061	NONE	F
10100004	LowerYellowstone	Yellowstone River	9-Sep-2009	47.28081	-104.51803	NONE	F
10100004	LowerYellowstone	Yellowstone River	9-Sep-2009	47.28077	-104.52584	NONE	F
10100004	LowerYellowstone	Yellowstone River	10-Sep-2009	47.25959	-104.54076	FAMU	D
10100004	LowerYellowstone	Yellowstone River	10-Sep-2009	47.28468	-104.51804	NONE	F
10100005	O Fallon	O Fallon Creek	9-Sep-2009	46.83012	-105.14468	FAMU	D
10100005	O Fallon	O Fallon Creek	9-Sep-2009	46.83012	-105.14468	PYGR	D
10110201	Upper Little Missouri	Little Beaver Creek	10-Aug-1991	46.03751	-104.38748	PYGR	B
10110201	Upper Little Missouri	Little Beaver Creek	12-May-1999	46.04870	-104.36920	FAMU	C
10110201	Upper Little Missouri	Little Beaver Creek	12-May-1999	46.04870	-104.36920	PYGR	C
10110201	Upper Little Missouri	Little Beaver Creek	12-Jul-1999	46.20120	-104.09600	PYGR	D
10110201	Upper Little Missouri	Little Missouri River	12-Jul-2004	45.27566	-103.64750	FAMU	C
10110201	Upper Little Missouri	Little Missouri River	21-Jul-2005	45.56420	-103.95310	FAMU	C
10110201	Upper Little Missouri	Little Missouri River	21-Jul-2005	45.46115	-104.04126	NONE	F
10110201	Upper Little Missouri	Little Missouri River	5-Jun-2006	45.03260	-104.42520	PYGR	C
10110202	Boxelder	Boxelder Creek	8-Jun-1991	45.84480	-104.14289	PYGR	C
10110202	Boxelder	Boxelder Creek	6-Aug-1991	45.64050	-104.39360	PYGR	D
10110202	Boxelder	Boxelder Creek	5-Jul-1994	45.68800	-104.36880	PYGR	C
10110202	Boxelder	Boxelder Creek	19-Jul-1994	45.68800	-104.36880	PYGR	C
10110202	Boxelder	Boxelder Creek	14-Jul-2001	45.82180	-104.24210	PYGR	C
10110202	Boxelder	Boxelder Creek	14-Jun-2004	45.82180	-104.24210	PYGR	C
10110204	Beaver	Beaver Creek	14-Aug-1996	46.73358	-104.23220	WHHE	B
10110204	Beaver	Beaver Creek	12-Jul-1999	46.73358	-104.23220	PYGR	B
10110204	Beaver	Beaver Creek	12-Jul-1999	46.60046	-104.13549	PYGR	B
10110204	Beaver	Beaver Creek	12-Jul-1999	46.98530	-104.18680	PYGR	C
10110204	Beaver	Beaver Creek	27-Jul-2008	46.99001	-104.18382	PYGR	B
10110204	Beaver	Beaver Creek	27-Jul-2008	46.99001	-104.18382	FAMU	C
17010101	Upper Kootenai	Dry Creek	16-Sep-1992	48.29565	-115.84173	NONE	F
17010101	Upper Kootenai	Fisher River	25-Jul-2007	48.36292	-115.32267	NONE	F
17010101	Upper Kootenai	Fisher River	25-Jul-2007	48.24472	-115.29077	NONE	F
17010101	Upper Kootenai	Five Mile Creek	26-Jul-2007	48.53498	-115.20319	WEPE	A
17010101	Upper Kootenai	Five Mile Creek	26-Jul-2007	48.53658	-115.19758	WEPE	A
17010101	Upper Kootenai	Fortine Creek	7-Aug-2007	48.60467	-114.95766	WEPE	C
17010101	Upper Kootenai	Keeler Creek	11-Aug-1992	48.33416	-115.93868	NONE	F
17010101	Upper Kootenai	Keeler Creek	17-Sep-1992	48.35716	-115.85899	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

17010101	Upper Kootenai	Lake Creek	25-Jul-2007	48.42091	-115.86332	NONE	F
17010101	Upper Kootenai	Meadow Creek	23-Jul-2007	48.42091	-115.86332	NONE	F
17010101	Upper Kootenai	Pipe Creek	25-Jul-2007	48.57809	-115.59150	NONE	F
17010101	Upper Kootenai	Pipe Creek	25-Jul-2007	48.52237	-115.52825	NONE	F
17010101	Upper Kootenai	Pipe Creek	25-Jul-2007	48.42730	-115.59665	NONE	F
17010101	Upper Kootenai	Snowshoe Creek	14-Aug-1992	48.20493	-115.64683	NONE	F
17010101	Upper Kootenai	Snowshoe Creek	14-Aug-1992	48.20721	-115.64200	NONE	F
17010101	Upper Kootenai	Swamp Creek	25-Jul-2007	48.21829	-115.46811	NONE	F
17010101	Upper Kootenai	Thompson River	1-Aug-2007	47.71273	-115.05859	WEPE	D
17010101	Upper Kootenai	Tobacco River	13-Aug-1992	48.89850	-115.12310	WEPE	H
17010102	Fisher	East Fisher River	26-Jul-2007	47.95641	-115.32267	WEPE	A
17010102	Fisher	East Fisher River	26-Jul-2007	47.95754	-115.33347	WEPE	B
17010102	Fisher	Little Wolf Creek	26-Jul-2007	48.30518	-115.03511	NONE	F
17010102	Fisher	Pleasant Valley Fisher River	26-Jul-2007	48.04413	-115.28385	WEPE	C
17010102	Fisher	Pleasant Valley Fisher River	26-Aug-2008	48.02584	-115.33896	NONE	F
17010102	Fisher	Pleasant Valley Fisher River	26-Aug-2008	48.04445	-115.28459	NONE	F
17010102	Fisher	Pleasant Valley Fisher River	26-Aug-2008	48.05443	-115.27847	NONE	F
17010102	Fisher	Slimmer Creek	26-Jul-2007	48.03182	-115.06092	WEPE	D
17010102	Fisher	Wolf Creek	26-Jul-2007	48.30627	-115.03677	NONE	F
17010102	Fisher	Wolf Creek	26-Jul-2007	48.26410	-115.15415	WEPE	C
17010102	Fisher	Wolf Creek	26-Jul-2007	48.29862	-115.04420	WEPE	C
17010102	Fisher	Wolf Creek	26-Jul-2007	48.30174	-115.03806	WEPE	C
17010103	Fisher	Basin Creek	23-Jul-2007	48.91220	-115.47480	NONE	F
17010103	Yaak	Beaver Creek	23-Jul-2007	48.81921	-115.68125	NONE	F
17010103	Yaak	Beaver Creek	23-Jul-2007	48.82000	-115.68000	NONE	F
17010103	Yaak	Clay Creek	23-Jul-2001	48.76500	-115.66830	NONE	F
17010103	Yaak	East Fork Yaak River	24-Jul-2001	48.93390	-115.45340	NONE	F
17010103	Yaak	Green Creek	23-Jul-2007	48.87000	-115.95000	NONE	F
17010103	Yaak	Hubbard Creek	23-Jul-2007	48.94300	-115.48000	NONE	F
17010103	Yaak	Lap Creek	23-Jul-2007	48.88288	-115.66396	NONE	F
17010103	Yaak	Pete Creek	14-Aug-1992	48.90000	-115.81000	WEPE	D
17010103	Yaak	Pete Creek	23-Jul-2007	48.85000	-115.77000	NONE	F
17010103	Yaak	Pete Creek	23-Jul-2007	48.90000	-115.81000	WEPE	D
17010103	Yaak	Seventeenmile Creek	23-Jul-2007	48.63000	-115.72000	NONE	F
17010103	Yaak	Seventeenmile Creek	25-Jul-2007	48.67678	-115.81902	NONE	F
17010103	Yaak	Seventeenmile Creek	25-Jul-2007	48.63730	-115.72032	NONE	F
17010103	Yaak	Seventeenmile North Fork	23-Jul-2007	48.66000	-115.76000	NONE	F
17010103	Yaak	Smoot Creek	23-Jul-2007	48.72000	-115.64000	NONE	F
17010103	Yaak	Spread Creek	23-Jul-2007	48.91000	-115.99000	NONE	F
17010103	Yaak	Turner Creek	12-Jul-2004	48.86452	-115.58420	WEPE	D
17010103	Yaak	Vinal Creek	13-Jul-2004	48.86426	-115.58639	WEPE	D
17010103	Yaak	West Fork Yaak River	5-Aug-2005	48.95255	-115.61042	WEPE	H
17010103	Yaak	Yaak River	4-Aug-2005	48.82761	-115.81282	WEPE	D

Comprehensive Report on the Freshwater Mussels in Montana

17010103	Yaak	Yaak River	5-Aug-2005	48.64450	-115.88620	WEPE	D
17010103	Yaak	Yaak River East Fork	23-Jul-2007	48.94000	-115.54000	NONE	F
17010103	Yaak	Yaak River East Fork	23-Jul-2007	48.93282	-115.45085	NONE	F
17010103	Yaak	Yaak River South Fork	23-Jul-2007	48.79000	-115.66000	NONE	F
17010104	Yaak	Yaak River	5-Aug-2005	48.56106	-115.97762	WEPE	D
17010201	Upper Clark Fork	Browns Gulch Creek	21-Aug-2009	46.13467	-112.57754	NONE	F
17010201	Upper Clark Fork	Browns Gulch Creek	21-Aug-2009	46.06047	-112.61490	WEPE	A
17010201	Upper Clark Fork	Browns Gulch Creek	21-Aug-2009	46.12165	-112.62153	WEPE	B
17010201	Upper Clark Fork	Browns Gulch Creek	21-Aug-2009	46.01361	-112.68658	NONE	F
17010201	Upper Clark Fork	Browns Gulch Creek	21-Aug-2009	46.12998	-112.60614	WEPE	B
17010201	Upper Clark Fork	Browns Gulch Creek	21-Aug-2009	46.13365	-112.58031	NONE	F
17010201	Upper Clark Fork	Browns Gulch Creek	21-Aug-2009	46.13519	-112.57650	NONE	F
17010201	Upper Clark Fork	Dog Creek	3-Sep-2007	46.64205	-112.37243	NONE	F
17010201	Upper Clark Fork	Little Blackfoot River	24-Jul-2007	46.56671	-112.67125	NONE	F
17010201	Upper Clark Fork	Little Blackfoot River	3-Sep-2007	46.59653	-112.58721	NONE	F
17010201	Upper Clark Fork	Little Blackfoot River	3-Sep-2007	46.59514	-112.59203	NONE	F
17010201	Upper Clark Fork	Little Blackfoot River	3-Sep-2007	46.57863	-112.52690	NONE	F
17010201	Upper Clark Fork	Little Blackfoot River	3-Sep-2007	46.56287	-112.42737	NONE	F
17010201	Upper Clark Fork	Little Blackfoot River	5-Sep-2007	46.51953	-112.79340	NONE	F
17010201	Upper Clark Fork	Little Blackfoot River	5-Sep-2007	46.42200	-112.48700	NONE	F
17010201	Upper Clark Fork	Little Blackfoot River	3-May-2008	46.59524	-112.59172	NONE	F
17010201	Upper Clark Fork	Little Blackfoot Spring Creek	3-May-2008	46.60795	-112.55464	NONE	F
17010201	Upper Clark Fork	Spotted Dog Creek	3-Sep-2007	46.50862	-112.56565	NONE	F
17010201	Upper Clark Fork	Warm Springs Creek	2-Oct-2008	46.13759	-112.89201	NONE	F
17010201	Upper Clark Fork	Warm Springs Creek	2-Oct-2008	46.13648	-112.89615	NONE	F
17010201	Upper Clark Fork	Warm Springs Creek	29-Oct-2008	46.13400	-112.95321	NONE	F
17010201	Upper Clark Fork	Warm Springs Creek	29-Oct-2008	46.13570	-112.96898	NONE	F
17010201	Upper Clark Fork	Warm Springs Creek	29-Oct-2008	46.14228	-112.99227	NONE	F
17010201	Upper Clark Fork	Warm Springs Creek	29-Oct-2008	46.17470	-113.15617	NONE	F
17010201	Upper Clark Fork	Warm Springs Creek	29-Oct-2008	45.45440	-113.29940	NONE	F
17010202	Flint-Rock	Barnes Creek	27-Aug-2008	46.61089	-113.16017	NONE	F
17010202	Flint-Rock	Bowles Creek	3-Jul-2007	46.19289	-113.75200	NONE	F
17010202	Flint-Rock	Copper Creek	3-Jul-2007	46.05487	-113.56688	NONE	F
17010202	Flint-Rock	Copper Creek	3-Jul-2007	46.04586	-113.58806	NONE	F
17010202	Flint-Rock	Deep Creek	17-Jul-2007	46.79803	-113.29928	NONE	F
17010202	Flint-Rock	Deep Creek	17-Jul-2007	46.79813	-113.29884	NONE	F
17010202	Flint-Rock	Dempsy Creek	19-Aug-2003	46.31002	-112.93904	NONE	F
17010202	Flint-Rock	East Fork Rock Creek	1-Jul-2007	46.19326	-113.48547	NONE	F
17010202	Flint-Rock	Flint Creek	1-Jul-2007	46.33779	-113.32078	NONE	F
17010202	Flint-Rock	Flint Creek	3-Jul-2007	46.36802	-113.31720	NONE	F
17010202	Flint-Rock	Fred Burr Creek	15-Jul-2007	46.29542	-113.31710	NONE	F
17010202	Flint-Rock	Grizzly Creek	1-Aug-2006	46.57458	-113.65663	NONE	F
17010202	Flint-Rock	Lost Creek	20-Jul-2003	46.16215	-112.89142	NONE	F
17010202	Flint-Rock	Lost Creek	28-Sep-2006	46.19652	-112.98052	NONE	F
17010202	Flint-Rock	Lost Creek	9-Oct-2008	46.19981	-112.98721	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

17010202	Flint-Rock	Lost Creek	29-Oct-2008	46.22097	-113.02952	NONE	F
17010202	Flint-Rock	Lost Creek	29-Oct-2008	46.19413	-112.82108	NONE	F
17010202	Flint-Rock	Marshall Creek	3-Jul-2007	46.36743	-113.33273	NONE	F
17010202	Flint-Rock	Modesty Creek	29-Oct-2008	46.23426	-112.80697	NONE	F
17010202	Flint-Rock	Moose Meadows Creek	31-Jul-2007	46.13685	-113.58987	WEPE	C
17010202	Flint-Rock	North Fork Willow Creek	3-Jul-2007	46.56842	-113.35969	WEPE	B
17010202	Flint-Rock	North Fork Willow Creek	3-Jul-2007	46.58419	-113.41453	NONE	F
17010202	Flint-Rock	Racetrack Creek	18-Aug-2003	46.27649	-112.91758	NONE	F
17010202	Flint-Rock	Racetrack Creek	28-Sep-2006	46.27618	-112.91261	NONE	F
17010202	Flint-Rock	Ranch Creek	17-Jul-2002	46.52565	-113.62341	NONE	F
17010202	Flint-Rock	Rock Creek	15-Jul-2004	46.69115	-113.66260	NONE	F
17010202	Flint-Rock	Rock Creek	19-Jul-2006	46.39796	-113.68957	WEPE	H
17010202	Flint-Rock	Rock Creek	1-Aug-2006	46.70719	-113.67246	NONE	F
17010202	Flint-Rock	Rock Creek	1-Aug-2006	47.03611	-112.92361	NONE	F
17010202	Flint-Rock	Rock Creek	1-Aug-2006	46.40818	-112.96772	NONE	F
17010202	Flint-Rock	Rock Creek	4-Sep-2007	46.70390	-113.67357	NONE	F
17010202	Flint-Rock	Rock Creek	4-Sep-2007	46.40818	-112.96772	NONE	F
17010202	Flint-Rock	Sand Basin Creek	3-Jul-2007	46.19628	-113.69806	WEPE	C
17010202	Flint-Rock	Sand Basin Creek	3-Jul-2007	46.19362	-113.69407	WEPE	D
17010202	Flint-Rock	Stony Creek	24-Jun-2004	46.33828	-113.62765	NONE	F
17010202	Flint-Rock	Tenmile Creek	16-Jul-2007	46.76221	-113.37038	NONE	F
17010202	Flint-Rock	Tenmile Creek	16-Jul-2007	46.76196	-113.36937	NONE	F
17010202	Flint-Rock	Tin Cup Joe Creek	19-Jul-2003	46.38581	-112.89563	NONE	F
17010202	Flint-Rock	Trout Creek	1-Jul-2007	46.21670	-113.37675	NONE	F
17010202	Flint-Rock	Upper Willow Creek	1-Jul-2007	46.41119	-113.50617	WEPE	B
17010202	Flint-Rock	Upper Willow Creek	1-Jul-2007	46.36704	-113.49913	WEPE	A
17010202	Flint-Rock	Upper Willow Creek	2-Jul-2007	46.51189	-113.50991	NONE	F
17010202	Flint-Rock	West Fork Gold Creek	25-Jun-2006	47.02147	-113.77726	NONE	F
17010202	Flint-Rock	West Fork Rock Creek	3-Jul-2002	46.19160	-113.70210	WEPE	D
17010202	Flint-Rock	West Fork Rock Creek	3-Jul-2007	46.19348	-113.70742	WEPE	D
17010202	Flint-Rock	West Fork Rock Creek	3-Jul-2007	46.21278	-113.70087	WEPE	C
17010202	Flint-Rock	West Fork Rock Creek	3-Jul-2007	46.20057	-113.73115	NONE	F
17010202	Flint-Rock	West Fork Rock Creek	3-Jul-2007	46.19816	-113.74045	NONE	F
17010202	Flint-Rock	West Fork Rock Creek	3-Jul-2007	46.20165	-113.70170	WEPE	B
17010203	Blackfoot	Arrastra Creek	8-Aug-2007	46.94601	-112.90140	NONE	F
17010203	Blackfoot	Arrastra Creek	8-Aug-2007	46.94628	-112.90392	NONE	F
17010203	Blackfoot	Blackfoot River	8-Aug-2007	46.91716	-113.01432	NONE	F
17010203	Blackfoot	Blackfoot River	8-Aug-2007	46.91872	-113.01542	NONE	F
17010203	Blackfoot	Blackfoot River	8-Aug-2007	46.93327	-113.11469	WEPE	D
17010203	Blackfoot	Blackfoot River	8-Aug-2007	46.94203	-112.94815	NONE	F
17010203	Blackfoot	Blackfoot River	8-Aug-2007	47.01341	-112.45411	NONE	F
17010203	Blackfoot	Blackfoot River	8-Aug-2007	46.94937	-112.63248	NONE	F
17010203	Blackfoot	Blackfoot River	5-Sep-2007	46.95305	-112.60509	NONE	F
17010203	Blackfoot	Blackfoot River	8-Sep-2007	46.89972	-113.75623	NONE	F
17010203	Blackfoot	Blackfoot River	27-Jul-2009	46.93635	-112.77166	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

17010203	Blackfoot	Blackfoot River	16-Oct-2009	47.01365	-113.22305	NONE	F
17010203	Blackfoot	Buffalo Gulch	5-Sep-2007	46.80307	-112.76947	WEPE	D
17010203	Blackfoot	Chamberlain Creek	28-Jul-2009	47.00877	-113.25947	NONE	F
17010203	Blackfoot	Clearwater River	9-Jul-2007	47.00088	-113.38251	NONE	F
17010203	Blackfoot	Clearwater River	9-Jul-2007	47.01927	-113.38567	NONE	F
17010203	Blackfoot	Clearwater River	9-Jul-2007	47.11993	-113.44790	NONE	F
17010203	Blackfoot	Clearwater River	9-Jul-2007	47.12185	-113.44941	NONE	F
17010203	Blackfoot	Clearwater River	9-Jul-2007	47.16471	-113.49012	NONE	F
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.22252	-113.53455	WEPE	C
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.22252	-113.53455	WEPE	B
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.22252	-113.53455	WEPE	B
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.22269	-113.53553	WEPE	B
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.22230	-113.53635	WEPE	B
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.22321	-113.53679	WEPE	A
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.22398	-113.53621	WEPE	A
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.22556	-113.53704	WEPE	A
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.22758	-113.53673	WEPE	A
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.23579	-113.53827	WEPE	A
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.23618	-113.53933	NONE	F
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.25202	-113.58281	NONE	F
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.29912	-113.57784	NONE	F
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.29856	-113.57801	NONE	F
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.34721	-113.58726	NONE	F
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.33496	-113.59793	NONE	F
17010203	Blackfoot	Clearwater River	10-Jul-2007	47.33348	-113.59690	WEPE	D
17010203	Blackfoot	Clearwater River	11-Jul-2007	47.35230	-113.58255	NONE	F
17010203	Blackfoot	Clearwater River	11-Jul-2007	47.11539	-113.44242	WEPE	C
17010203	Blackfoot	Clearwater River	11-Jul-2007	47.11602	-113.44477	WEPE	C
17010203	Blackfoot	Clearwater River	11-Jul-2007	46.96448	-113.37910	NONE	F
17010203	Blackfoot	Clearwater River	21-Jul-2009	47.23579	-113.53827	WEPE	A
17010203	Blackfoot	Clearwater River	21-Jul-2009	47.24316	-113.54217	WEPE	C
17010203	Blackfoot	Clearwater River	27-Jul-2009	47.24791	-113.54636	WEPE	A
17010203	Blackfoot	Colt Creek	11-Jun-2001	47.32610	-113.59731	WEPE	D
17010203	Blackfoot	Colt Creek	11-Jun-2001	47.32610	-113.59731	WEPE	C
17010203	Blackfoot	Copper Creek	8-Aug-2007	47.07877	-112.61807	NONE	F
17010203	Blackfoot	Cottonwood Creek	18-Jul-1996	46.86075	-112.98865	NONE	F
17010203	Blackfoot	Cottonwood Creek	18-Jul-1996	47.03691	-113.26123	NONE	F
17010203	Blackfoot	Cottonwood Creek	18-Jul-1996	47.05053	-113.27153	NONE	F
17010203	Blackfoot	Cottonwood Creek	18-Jul-1996	47.05200	-113.27228	NONE	F
17010203	Blackfoot	Cottonwood Creek	18-Jul-1996	47.03075	-113.27275	NONE	F
17010203	Blackfoot	Cottonwood Creek	18-Jul-1996	47.03075	-113.27275	NONE	F
17010203	Blackfoot	Cottonwood Creek	18-Jul-2007	47.03075	-113.27275	NONE	F
17010203	Blackfoot	Cottonwood Creek	18-Jul-2007	47.05063	-113.27162	NONE	F
17010203	Blackfoot	Cottonwood Creek	8-Aug-2007	47.06640	-113.26408	NONE	F
17010203	Blackfoot	Cottonwood Creek	8-Aug-2007	47.07723	-113.25961	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

17010203	Blackfoot	Cottonwood Creek	8-Aug-2007	47.06932	-113.26540	NONE	F
17010203	Blackfoot	Cottonwood Creek	8-Aug-2007	47.09462	-113.29182	NONE	F
17010203	Blackfoot	Cottonwood Creek	17-Aug-2007	47.09701	-113.29578	NONE	F
17010203	Blackfoot	Deer Creek	10-Jul-2007	47.21022	-113.54196	NONE	F
17010203	Blackfoot	Douglas Creek	8-Aug-2007	46.86053	-113.00547	NONE	F
17010203	Blackfoot	East Fork Clearwater Creek	11-Jul-2007	47.35994	-113.56518	NONE	F
17010203	Blackfoot	Grentier Spring Creek	28-Jul-2009	46.93565	-112.68891	NONE	F
17010203	Blackfoot	Marshall Creek	27-Jul-2009	47.29009	-113.63799	WEPE	A
17010203	Blackfoot	Marshall Creek	27-Jul-2009	47.28830	-113.62739	WEPE	B
17010203	Blackfoot	Marshall Creek	27-Jul-2009	47.28594	-113.62383	WEPE	B
17010203	Blackfoot	Marshall Creek	27-Jul-2009	47.28219	-113.61845	WEPE	B
17010203	Blackfoot	Marshall Creek	27-Jul-2009	47.28007	-113.59894	NONE	F
17010203	Blackfoot	Marshall Creek	27-Jul-2009	47.28334	-113.65980	NONE	F
17010203	Blackfoot	Marshall Creek	27-Jul-2009	47.28538	-113.62321	WEPE	B
17010203	Blackfoot	McCabe Creek	28-Jul-2009	47.08078	-113.14413	NONE	F
17010203	Blackfoot	Monture Creek	8-Aug-2007	47.03767	-113.22010	NONE	F
17010203	Blackfoot	Monture Creek	28-Jul-2009	47.02410	-113.22828	NONE	F
17010203	Blackfoot	Monture Creek	28-Jul-2009	47.10997	-113.14990	NONE	F
17010203	Blackfoot	Monture Creek	28-Jul-2009	47.11885	-113.14661	NONE	F
17010203	Blackfoot	Morrell Creek	9-Jul-2007	47.15962	-113.46703	NONE	F
17010203	Blackfoot	Nevada Creek	9-Jul-2007	46.75822	-112.70388	NONE	F
17010203	Blackfoot	Nevada Creek	9-Jul-2007	46.75842	-112.70247	WEPE	H
17010203	Blackfoot	Nevada Creek	9-Jul-2007	46.75853	-112.70369	WEPE	H
17010203	Blackfoot	Nevada Creek	26-Jul-2007	46.76487	-112.63307	NONE	F
17010203	Blackfoot	Nevada Creek	8-Aug-2007	46.80941	-112.83030	NONE	F
17010203	Blackfoot	Nevada Creek	8-Aug-2007	46.83218	-112.89674	WEPE	D
17010203	Blackfoot	Owl Creek	9-Jul-2007	47.11599	-113.45740	WEPE	D
17010203	Blackfoot	Owl Creek	9-Jul-2007	47.11505	-113.47259	WEPE	D
17010203	Blackfoot	Owl Creek	9-Jul-2007	47.11003	-113.49761	NONE	F
17010203	Blackfoot	Placid Creek	9-Jul-2007	47.14449	-113.59538	NONE	F
17010203	Blackfoot	Sauerkraut Creek	24-Sep-2009	46.91637	-112.75499	WEPE	C
17010203	Blackfoot	Seeley Creek	24-Jul-2007	47.21052	-113.45428	NONE	F
17010203	Blackfoot	Shanley Creek	18-Jul-2007	47.09708	-113.22614	NONE	F
17010203	Blackfoot	Shanley Creek	18-Jul-2007	47.07700	-113.25124	NONE	F
17010203	Blackfoot	Ward Creek	28-Jul-2009	46.96965	-112.99063	NONE	F
17010203	Blackfoot	West Fork Clearwater River	8-Aug-2007	47.25432	-113.55446	WEPE	C
17010203	Blackfoot	West Fork Clearwater River	27-Jul-2009	47.30364	-113.60519	NONE	F
17010203	Blackfoot	West Fork Clearwater River	27-Jul-2009	47.25224	-113.58344	NONE	F
17010203	Blackfoot	West Fork Clearwater River	27-Jul-2009	47.28249	-113.59881	NONE	F
17010203	Blackfoot	Willow Creek	8-Aug-2007	46.98611	-112.39014	NONE	F
17010203	Blackfoot	Willow Creek	16-Oct-2009	46.90181	-112.72081	NONE	F
17010204	Middle Clark Fork	Butler Creek	12-Jul-2006	47.12561	-114.43692	NONE	F
17010204	Middle Clark Fork	Clark Fork River	3-Aug-2006	47.01450	-114.73930	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

17010204	Middle Clark Fork	Clark Fork River	4-Sep-2007	47.19611	-114.89019	NONE	F
17010204	Middle Clark Fork	Clark Fork River	4-Sep-2007	47.35580	-114.78333	NONE	F
17010204	Middle Clark Fork	Clark Fork River	4-Sep-2007	46.88258	-113.93120	NONE	F
17010204	Middle Clark Fork	Clark Fork River	4-Sep-2007	46.87425	-114.06660	NONE	F
17010204	Middle Clark Fork	Clark Fork River	4-Sep-2007	46.93124	-114.21036	NONE	F
17010204	Middle Clark Fork	Clark Fork River	4-Sep-2007	47.02327	-114.33588	WEPE	H
17010204	Middle Clark Fork	Clark Fork River	4-Sep-2007	47.02810	-114.39460	WEPE	H
17010204	Middle Clark Fork	Clark Fork River	5-Sep-2007	47.29611	-115.09028	WEPE	H
17010204	Middle Clark Fork	Clark Fork River	5-Sep-2007	46.66121	-113.14857	WEPE	H
17010204	Middle Clark Fork	Clark Fork River	5-Sep-2007	47.22133	-114.96070	WEPE	H
17010204	Middle Clark Fork	Clark Fork River	5-Sep-2007	47.34047	-114.77957	WEPE	H
17010204	Middle Clark Fork	Coyle Creek	2-Aug-2006	47.25786	-115.27180	NONE	F
17010204	Middle Clark Fork	East Fork Big Creek	1-Aug-2006	47.29391	-115.45517	NONE	F
17010204	Middle Clark Fork	East Fork Big Creek	2-Aug-2006	47.30211	-115.45261	NONE	F
17010204	Middle Clark Fork	East Fork Burnt Creek	25-Jul-2008	47.22985	-114.61612	NONE	F
17010204	Middle Clark Fork	Hoodoo Creek	2-Aug-2006	46.98697	-115.01195	NONE	F
17010204	Middle Clark Fork	Kennedy Creek	12-Jul-2006	47.16473	-114.42344	NONE	F
17010204	Middle Clark Fork	Kennedy Creek trib	12-Jul-2006	47.15278	-114.42696	NONE	F
17010204	Middle Clark Fork	Lake Creek	3-Aug-2006	46.98803	-114.99716	NONE	F
17010204	Middle Clark Fork	Lodgepole Creek	1-Aug-2006	47.31766	-115.44801	NONE	F
17010204	Middle Clark Fork	Lodgepole Creek trib	1-Aug-2006	47.31109	-115.43465	NONE	F
17010204	Middle Clark Fork	McCormick Creek	24-Jul-2003	47.15250	-114.48667	NONE	F
17010204	Middle Clark Fork	Ninemile Creek	2-Aug-1993	47.03764	-114.39330	NONE	F
17010204	Middle Clark Fork	Ninemile Creek	12-Jul-2006	47.08190	-114.43920	NONE	F
17010204	Middle Clark Fork	Ninemile Creek	3-Sep-2007	47.08151	-114.43902	WEPE	H
17010204	Middle Clark Fork	Ninemile Creek	3-Sep-2007	47.16500	-114.55780	WEPE	H
17010204	Middle Clark Fork	Ninemile Creek	19-Jul-2008	47.11618	-114.50076	WEPE	D
17010204	Middle Clark Fork	North Fork Second Creek	3-Aug-2006	47.16404	-114.71135	NONE	F
17010204	Middle Clark Fork	Soldier Creek	25-Jul-2008	47.22214	-114.59896	NONE	F
17010204	Middle Clark Fork	South Fork Trout Creek	23-Jul-2008	46.95398	-114.96809	NONE	F
17010204	Middle Clark Fork	Spruce Creek	2-Aug-2006	47.31486	-115.48841	NONE	F
17010204	Middle Clark Fork	Stony Creek	12-Jul-2006	47.10939	-114.39593	NONE	F
17010204	Middle Clark Fork	Stony Creek	23-Jul-2008	47.07278	-114.42806	NONE	F
17010204	Middle Clark Fork	trib to McCormick Creek	12-Jul-2006	47.17323	-114.42976	NONE	F
17010204	Middle Clark Fork	Trout Creek	23-Jul-2008	47.04462	-114.95147	NONE	F
17010204	Middle Clark Fork	trib to Lodgepole Creek	1-Aug-2006	47.31589	-115.43356	NONE	F
17010204	Middle Clark Fork	McKinney Creek	1-Aug-2006	47.32606	-115.42636	NONE	F
17010204	Middle Clark Fork	Van Ness Creek	2-Aug-2006	47.08209	-114.93553	NONE	F
17010204	Middle Clark Fork	Windfall Creek	23-Jul-2008	47.03820	-114.92846	NONE	F
17010205	Middle Clark Fork	Ambrose Creek	26-Jul-2007	46.32306	-113.54037	NONE	F
17010205	Bitterroot River	Ambrose Creek	26-Jul-2007	46.32344	-113.55051	NONE	F
17010205	Bitterroot River	Bitterroot River	11-Jul-2006	46.58520	-114.06706	NONE	F
17010205	Bitterroot River	Bitterroot River	11-Jul-2006	46.52085	-114.10860	NONE	F
17010205	Bitterroot River	Bitterroot River	13-Jul-2007	46.85225	-114.10003	NONE	F
17010205	Bitterroot River	Bitterroot River	25-Aug-2007	45.98253	-114.15110	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

17010205	Bitterroot River	Bitterroot River	25-Aug-2007	46.75465	-114.06207	NONE	F
17010205	Bitterroot River	Bitterroot River	25-Aug-2007	46.72191	-114.04672	NONE	F
17010205	Bitterroot River	Bitterroot River	25-Aug-2007	46.00901	-114.09854	WEPE	C
17010205	Bitterroot River	Bitterroot River	4-Sep-2007	46.35000	-114.04120	WEPE	H
17010205	Bitterroot River	Bitterroot River	4-Sep-2007	46.58230	-114.06271	WEPE	H
17010205	Bitterroot River	Bitterroot River	4-Sep-2007	46.56785	-114.09166	WEPE	H
17010205	Bitterroot River	Bitterroot River	12-Sep-2007	46.84098	-114.06646	WEPE	H
17010205	Bitterroot River	Bitterroot River	27-Jun-2009	46.77048	-114.05929	WEPE	H
17010205	Bitterroot River	Burnt Fork Bitterroot River	20-Jul-2003	46.38484	-113.86330	NONE	F
17010205	Bitterroot River	Burnt Fork Bitterroot River	2-Aug-2007	46.24244	-113.54135	NONE	F
17010205	Bitterroot River	Burnt Fork Bitterroot River	2-Aug-2007	46.23459	-113.54072	NONE	F
17010205	Bitterroot River	Cameron Creek	10-Jul-2007	45.50171	-113.58545	WEPE	C
17010205	Bitterroot River	Cameron Creek	25-Sep-2007	45.53401	-113.57242	WEPE	B
17010205	Bitterroot River	Daly Creek trib	30-Jun-2007	46.23273	-113.84638	NONE	F
17010205	Bitterroot River	Deer Creek	20-Sep-2007	45.58947	-114.34072	NONE	F
17010205	Bitterroot River	East Fork Bitterroot River	20-Jul-2007	45.85906	-114.02213	WEPE	C
17010205	Bitterroot River	East Fork Bitterroot River	5-Sep-2007	45.85906	-114.02213	WEPE	D
17010205	Bitterroot River	East Fork Bitterroot River	5-Sep-2007	45.86590	-113.87117	NONE	F
17010205	Bitterroot River	East Fork Bitterroot River	5-Sep-2007	45.86083	-114.02809	WEPE	H
17010205	Bitterroot River	East Fork Bitterroot River	28-Sep-2007	45.55777	-113.43451	NONE	F
17010205	Bitterroot River	Gilbert Creek	21-Sep-2007	45.51491	-114.04399	NONE	F
17010205	Bitterroot River	Gold Creek	2-Aug-2007	46.23399	-113.54066	NONE	F
17010205	Bitterroot River	Howard Creek	16-Aug-2006	46.77636	-114.53292	WEPE	D
17010205	Bitterroot River	Laird Creek	21-Sep-2007	45.51390	-114.04086	NONE	F
17010205	Bitterroot River	Little Sleeping Child Creek	4-Aug-2005	46.12450	-114.12697	WEPE	H
17010205	Bitterroot River	Little Sleeping Child Creek	11-Jul-2007	46.07594	-114.07321	WEPE	B
17010205	Bitterroot River	Little Sleeping Child Creek	21-Aug-2007	46.06138	-114.06039	NONE	F
17010205	Bitterroot River	Lodgepole Creek	27-Sep-2007	45.50289	-113.48788	NONE	F
17010205	Bitterroot River	Lolo Creek	18-Aug-2005	46.74326	-114.15562	NONE	F
17010205	Bitterroot River	Lolo Creek	18-Aug-2005	46.74340	-114.15599	NONE	F
17010205	Bitterroot River	Lolo Creek	10-Jul-2006	46.76618	-114.34048	NONE	F
17010205	Bitterroot River	Lost Horse Creek	11-Jul-2007	46.06030	-114.15307	NONE	F
17010205	Bitterroot River	McCalla Creek	5-Sep-2007	46.51403	-114.11837	NONE	F
17010205	Bitterroot River	Meadow Creek	26-Sep-2007	45.51959	-113.48256	NONE	F
17010205	Bitterroot River	Meadow Creek	26-Sep-2007	45.51124	-113.49237	NONE	F
17010205	Bitterroot River	Meadow Creek	26-Sep-2007	45.49759	-113.48106	NONE	F
17010205	Bitterroot River	Mill Creek tributary	11-Jul-2006	46.72103	-114.22024	NONE	F
17010205	Bitterroot River	Moose Meadows Creek	18-Aug-2005	46.13685	-113.58987	WEPE	C
17010205	Bitterroot River	Mormon Creek	11-Jul-2006	46.71799	-114.14264	NONE	F
17010205	Bitterroot River	Nez Perce Creek	20-Sep-2007	45.46270	-114.20119	NONE	F
17010205	Bitterroot River	O'Brien Creek	29-Jun-2004	46.85126	-114.17085	NONE	F
17010205	Bitterroot River	Rye Creek	21-Aug-2007	45.97678	-114.01243	NONE	F
17010205	Bitterroot River	Sawmill Creek	2-Aug-2007	46.26506	-113.54140	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

17010205	Bitterroot River	Skalkaho Creek	22-Aug-2007	46.09315	-113.57514	NONE	F
17010205	Bitterroot River	Skalkaho Creek	22-Aug-2007	46.09433	-113.57048	NONE	F
17010205	Bitterroot River	Slate Creek	4-Sep-2007	45.69782	-114.28660	NONE	F
17010205	Bitterroot River	Sleeping Child Creek	12-Jul-2007	46.07559	-114.03288	NONE	F
17010205	Bitterroot River	Sleeping Child Creek	12-Jul-2007	46.07483	-114.02524	NONE	F
17010205	Bitterroot River	Sleeping Child Creek	12-Jul-2007	46.08072	-114.04032	NONE	F
17010205	Bitterroot River	Swift Creek	26-Sep-2007	45.53298	-113.45964	NONE	F
17010205	Bitterroot River	Threemile Creek	2-Aug-2007	46.37162	-113.54498	NONE	F
17010205	Bitterroot River	Threemile Creek	2-Aug-2007	46.36460	-113.52502	NONE	F
17010205	Bitterroot River	Two Bear Creek	12-Jul-2007	46.06433	-114.00292	NONE	F
17010205	Bitterroot River	Warm Springs Creek	24-Sep-2007	45.49438	-114.03809	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	2-Sep-1992	45.92963	-114.13320	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	4-Sep-2007	45.93132	-114.13190	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	4-Sep-2007	45.92777	-114.13366	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	4-Sep-2007	45.76585	-114.28195	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	4-Sep-2007	45.62424	-114.30359	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	4-Sep-2007	45.62169	-114.30546	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	4-Sep-2007	45.62165	-114.30388	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	4-Sep-2007	45.62509	-114.30269	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	4-Sep-2007	45.59342	-114.32278	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	4-Sep-2007	45.66772	-114.30425	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	4-Sep-2007	45.81490	-114.25336	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	5-Sep-2007	45.82698	-114.23339	WEPE	D
17010205	Bitterroot River	West Fork Bitterroot River	20-Sep-2007	45.80501	-114.26225	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	20-Sep-2007	45.48881	-114.33167	NONE	F
17010205	Bitterroot River	West Fork Bitterroot River	1-Sep-2008	45.37498	-114.18149	NONE	F
17010205	Bitterroot River	West Fork Camp Creek	24-Sep-2007	45.45229	-113.56563	NONE	F
17010205	Bitterroot River	West Fork Lolo Creek	30-Jun-2006	46.64400	-114.58060	NONE	F
17010205	Bitterroot River	West Fork Lolo Creek	18-Aug-2007	46.63892	-114.58026	NONE	F
17010205	Bitterroot River	West Fork Lolo Creek	5-Sep-2007	46.68550	-114.55800	NONE	F
17010205	Bitterroot River	Willow Creek	9-Jul-2007	46.17367	-113.57517	NONE	F
17010205	Bitterroot River	Willow Creek	9-Jul-2007	46.17313	-113.56394	NONE	F
17010206	North Fork Flathead	Griffin Creek	15-Aug-2002	48.28140	-114.76336	NONE	F
17010206	North Fork Flathead	Griffin Creek	1-Jul-2003	48.28140	-114.76336	NONE	F
17010206	North Fork Flathead	North Fork Flathead River	24-Jul-2001	48.83676	-114.34407	NONE	F
17010206	North Fork Flathead	North Fork Flathead River	24-Jul-2001	48.83676	-114.34407	NONE	F
17010207	Middle Fork Flathead	Bull River	12-Jul-2004	48.10509	-115.77752	WEPE	D
17010207	Middle Fork Flathead	Schafer Creek	11-Jul-2007	48.06390	-113.24530	NONE	F
17010207	Middle Fork Flathead	Tunnel Creek	16-Aug-2003	48.35910	-113.67960	NONE	F
17010208	Flathead Lake	Ashley Creek	23-Jul-2007	48.09517	-114.55178	WEPE	D

Comprehensive Report on the Freshwater Mussels in Montana

17010208	Flathead Lake	Crow Creek	1-Jul-1900	47.48757	-114.09666	WEPE	H
17010209	South Fork Flathead	Stony Creek	16-Sep-1992	47.90656	-113.57200	NONE	F
17010210	Stillwater	Stillwater River	2-Sep-2009	48.60391	-114.65698	NONE	F
17010210	Stillwater	Stillwater River	2-Sep-2009	48.60896	-114.65690	NONE	F
17010210	Stillwater	Stillwater River	2-Sep-2009	48.64333	-114.72487	NONE	F
17010210	Stillwater	Sunday Creek	2-Sep-2009	48.63228	-114.70886	NONE	F
17010211	Swan	Beaver Creek	11-Jul-2007	47.38793	-113.66017	NONE	F
17010211	Swan	Glacier Creek	11-Jul-2007	47.52780	-113.72174	NONE	F
17010211	Swan	Glacier Creek	17-Sep-2009	47.42463	-113.75504	NONE	F
17010211	Swan	Holland Creek	17-Sep-2009	47.44061	-113.61628	NONE	F
17010211	Swan	Holland Creek	17-Sep-2009	47.44074	-113.67444	NONE	F
17010211	Swan	Moose Creek	23-Aug-2008	48.82479	-114.52056	NONE	F
17010211	Swan	Smith Creek	11-Jul-2007	47.58575	-113.73970	NONE	F
17010211	Swan	Smith Creek trib	11-Jul-2007	47.55184	-113.69573	NONE	F
17010211	Swan	Swan River	11-Jul-2007	47.58343	-113.75767	NONE	F
17010211	Swan	Swan River	11-Jul-2007	47.52750	-113.71371	NONE	F
17010211	Swan	Swan River	11-Jul-2007	47.46212	-113.68449	NONE	F
17010211	Swan	Swan River	11-Jul-2007	47.42132	-113.67009	NONE	F
17010211	Swan	Swan River	11-Jul-2007	47.67305	-113.80998	NONE	F
17010211	Swan	Swan River	12-Jul-2007	47.62986	-113.78781	NONE	F
17010211	Swan	Swan River	12-Jul-2007	47.40486	-113.71703	NONE	F
17010211	Swan	Swan River	17-Sep-2009	47.34313	-113.74654	NONE	F
17010211	Swan	Swan River trib	11-Jul-2007	47.52626	-113.71267	NONE	F
17010213	Thompson	Bassoo Creek	18-Jul-2004	47.83179	-114.69409	WEPE	B
17010213	Thompson	Big Cherry Creek	26-Aug-2008	48.24687	-115.54945	NONE	F
17010213	Thompson	Bull River	25-Jul-2007	48.13600	-115.86681	NONE	F
17010213	Thompson	Camp Creek	25-Aug-2008	47.48649	-115.27064	NONE	F
17010213	Thompson	Chilly Creek	27-Jul-2007	47.78800	-115.29654	NONE	F
17010213	Thompson	Clark Fork River	25-Aug-2008	47.61638	-115.38979	NONE	F
17010213	Thompson	Cold Creek	27-Jul-2007	47.79999	-115.29596	NONE	F
17010213	Thompson	Dry Creek	25-Aug-2008	47.58545	-115.35644	NONE	F
17010213	Thompson	East Fork Dry Creek	25-Aug-2008	47.55202	-115.37578	NONE	F
17010213	Thompson	Freezeout Creek	27-Jul-2007	47.77319	-115.29857	NONE	F
17010213	Thompson	Graves Creek	25-Aug-2008	47.71432	-115.38213	NONE	F
17010213	Thompson	Graves Creek Trib	27-Jul-2007	47.75041	-115.29597	NONE	F
17010213	Thompson	Little Thompson River	11-Aug-2008	47.69570	-114.81110	WEPE	C
17010213	Thompson	Little Thompson River	27-Aug-2008	47.71021	-115.01349	NONE	F
17010213	Thompson	Little Thompson River	27-Aug-2008	47.68608	-114.99834	NONE	F
17010213	Thompson	McGinnus Creek	26-Aug-2008	47.96296	-115.21727	NONE	F
17010213	Thompson	McGinnus Creek	26-Aug-2008	48.02557	-115.24224	NONE	F
17010213	Thompson	Middle Fork Bull River	27-Aug-2008	48.19341	-115.81562	NONE	F
17010213	Thompson	Miller Creek	25-Aug-2008	47.82482	-115.30052	NONE	F
17010213	Thompson	Miller Lake	25-Aug-2008	47.92495	-115.27954	NONE	F
17010213	Thompson	Mudd Creek	27-Aug-2008	47.66097	-114.97547	NONE	F
17010213	Thompson	North Fork Bull River	27-Aug-2008	48.19657	-115.81025	NONE	F

Comprehensive Report on the Freshwater Mussels in Montana

17010213	Thompson	North Fork Clear Creek	27-Aug-2008	47.61463	-115.59437	NONE	F
17010213	Thompson	Pilgrim Creek	27-Aug-2008	47.99571	-115.76427	WEPE	D
17010213	Thompson	Sylvan Lake	25-Aug-2008	47.91595	-115.27975	NONE	F
17010213	Thompson	Thompson River	25-Jul-2008	47.58890	-115.23234	NONE	F
17010213	Thompson	Thompson River	25-Jul-2008	47.60757	-115.20541	NONE	F
17010213	Thompson	Thompson River	25-Jul-2008	47.63075	-115.17600	NONE	F
17010213	Thompson	Thompson River	26-Aug-2008	47.94109	-114.97532	NONE	F
17010213	Thompson	Thompson River	27-Aug-2008	47.92030	-115.00187	WEPE	B
17010213	Thompson	Thompson River	27-Aug-2008	47.92114	-115.00069	WEPE	B
17010213	Thompson	Thompson River	27-Aug-2008	47.91160	-115.04247	WEPE	D
17010213	Thompson	Thompson River	27-Aug-2008	47.91048	-115.04959	WEPE	C
17010213	Thompson	Thompson River	27-Aug-2008	47.90018	-115.04764	WEPE	D
17010213	Thompson	Thompson River	27-Aug-2008	47.90153	-115.04971	NONE	F
17010213	Thompson	Thompson River	27-Aug-2008	47.86160	-115.00150	NONE	F
17010213	Thompson	Thompson River	27-Aug-2008	47.78402	-115.00818	NONE	F
17010213	Thompson	Thompson River	27-Aug-2008	47.73887	-115.01690	NONE	F
17010213	Thompson	Thompson River	27-Aug-2008	47.73879	-115.01564	WEPE	D
17010213	Thompson	Thompson River	27-Aug-2008	47.73972	-115.01519	WEPE	C
17010213	Thompson	Twelvemile Creek	25-Aug-2008	47.40879	-115.25438	NONE	F
17010213	Thompson	Twelvemile Creek	25-Aug-2008	47.47168	-115.27621	NONE	F
17010213	Thompson	Twelvemile Creek	25-Aug-2008	47.47275	-115.26433	NONE	F
17010213	Thompson	Twelvemile Creek	25-Aug-2008	47.47849	-115.25275	NONE	F
17010213	Thompson	Vermilion River	27-Jul-2007	47.84757	-115.30053	NONE	F
17010213	Thompson	Vermilion River	27-Jul-2007	47.80734	-115.30029	NONE	F
17010213	Thompson	Vermilion River	25-Aug-2008	47.81715	-115.29924	NONE	F
17010213	Thompson	West Fork Thompson River	25-Aug-2008	47.65791	-115.18706	NONE	F
17010213	Thompson	West Fork Thompson River	25-Aug-2008	47.65957	-115.21176	NONE	F
17010213	Thompson	Willow Creek Vermillion	25-Aug-2008	47.87138	-115.31018	NONE	F
17010213	Thompson	Willow Creek Vermillion	25-Aug-2008	47.87516	-115.30041	NONE	F
17060302	Big Boulder	Big Boulder Creek	10-Aug-2004	45.57600	-116.06900	NONE	F
17060302	Big Boulder	El Dorado Creek	8-Jul-2008	46.28161	-115.70985	WEPE	A
17060302	Big Boulder	El Dorado Creek	8-Jul-2008	46.29803	-115.64506	WEPE	B
17060302	Big Boulder	El Dorado Creek	8-Jul-2008	46.25852	-115.69258	WEPE	A
17060302	Big Boulder	El Dorado Creek	8-Jul-2008	46.25677	-115.69375	WEPE	C
17060302	Big Boulder	Swamp Creek	27-Aug-2004	46.75090	-115.05416	WEPE	D
17060306	Musselshell, ID	Browns Creek	6-Jul-2008	46.36608	-115.79184	NONE	F
17060306	Musselshell, ID	Browns Creek	7-Jul-2008	46.34484	-115.78012	WEPE	A
17060306	Musselshell, ID	El Dorado Creek	8-Jul-2008	46.28378	-115.71257	WEPE	B
17060306	Musselshell, ID	El Dorado Creek	8-Jul-2008	46.29843	-115.64607	WEPE	C
17060306	Musselshell, ID	Lolo Creek	6-Jul-2008	46.31645	-115.74680	WEPE	C
17060306	Musselshell, ID	Musselshell Creek	6-Jul-2008	46.35104	-115.76110	WEPE	A
17060306	Musselshell, ID	Musselshell Creek	7-Jul-2008	46.35143	-115.76091	WEPE	A
17060306	Musselshell, ID	Musselshell Creek	7-Jul-2008	46.34427	-115.77849	WEPE	A
17060306	Musselshell, ID	Musselshell Creek	7-Jul-2008	46.39093	-115.74305	WEPE	A

Comprehensive Report on the Freshwater Mussels in Montana

17060306	Musselshell, ID	Quartz Creek	27-Jul-2003	46.80460	-115.44420	WEPE	D
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